Presented by Mr. Hollis

BRIGHTON AND SUSSEX

Medico-Chirurgical

SOCIETY.

days allowed for reading
this Book.

14676 B

E. xv a
18

BORSIERI

ABSTRACT

FROM

The Regulations of the Library.

4.—That all books shall be returned half-yearly, in order that they may be inspected by the Honorary Secretaries.

5.—That any member detaining a book beyond the time prescribed by the rules, shall be fined 6d. per day for each volume so detained, after it has been applied for by the Secretary.

6.—That if any book be in any manner injured, the same shall be taken at cost price by the member in whose possession it was so damaged; or if any book be lost, the member to whom it was last delivered shall forfeit its published price.

7.—That no member shall be allowed to lend a book belonging to the Society.

Digitized by the Internet Archive
in 2017 with funding from
Wellcome Library

https://archive.org/details/b29332953_0003

THE

INSTITUTIONS

OF THE

PRACTICE OF MEDICINE;

DELIVERED

IN

A COURSE OF LECTURES

BY

JO. BAPTIST BURSERIUS,

DE KANIFELD.

TRANSLATED FROM THE LATIN,

BY WILLIAM CULLEN BROWN, M. D.

EXTRAORDINARY MEMBER, AND LATELY ONE OF THE ANNUAL PRESIDENTS OF THE ROYAL MEDICAL SOCIETY OF EDINBURGH.

IN FIVE VOLUMES.

VOL. III.

London:

PRINTED FOR THOMAS COX, AT HIS MEDICAL LIBRARY, ST. THOMAS'S-STREET, BOROUGH; J. MURRAY, FLEET-STREET; AND J. CALLOW, CROWN COURT, SOHO.

1806.

WELLCOME
HISTORICAL
MEDICAL
LIBRARY

ADVERTISEMENT.

THE Marginal Notes in this, and the ſubſequent Volumes, have been purpoſely diſcontinued, as they are of no abſolute utility, but, on the contrary, ſince the late extravagant riſe on the price of Paper has taken place, would have been attended with great additional expence in the publication of the Work, which of courſe eventually muſt have fallen on the Purchaſer. Beſides, on account of their increaſing frequency in the Volumes which are yet to come, in which they are often continuous for whole pages, and the manner in which they are ſunk in the body of the text, they cannot always be placed oppoſite to the paſſages to which they refer; and they greatly diſfigure the regular appearance of the Book,—a conſideration certainly not to be altogether overlooked.

EDINBURGH,
July 22. 1801.

ERRATA.

	Pag.	Lin.	
After fact	1.	28.	*Inſert* a
For are	32.	*laſt*,	*Read* is
— kind	56.	1.	—— ſmall-pox
In	65.	3.	*Dele* with
For hold	66.	*laſt*,	*Read* holds
— depreſſed	75.	28.	—— ſuppreſſed
— ſtophyloma	77.	8.	—— ſtaphyloma
After he	84.	28.	*Inſert* was
—— he	ib.	29.	*Dele* was
For he	128.	29.	*Read* it—and *for* convinced *read* evinced
In	119.	1.	*Dele* that
Before advice	174.	24.	*Inſert* the
For marks	321.	19.	*Read* remarks
— fever	446.	16.	—— fear
After does	464.	17.	*Inſert* not
For ſometimes	472.	26.	*Read* ſome
— hopes	488.	23.	—— hope
After Montpellier	496.	10.	two *ought to begin the following ſentence.*

CONTENTS.

CHAP. IX.—*Of the Small-pox*, - Pag. 1

CHAP. X.—*Of the Petechiæ, or Petechial Diſ-*
eaſe, - - 226

CHAP. XI.—*Of the Miliary Eruption*, 370

A Remark on the Plague, - 532

CHAPTER IX.

OF SMALL-POX *.

158. IT was formerly keenly conteſted, whether ſmall-pox were known to Hippocrates, Galen, and other ancient phyſicians, ſome affirming that they were, and others denying it; it would therefore be ſuperfluous at preſent to waſte time in ſuch a controverſy †. But moſt authors conſider it as being very probable that ſmall-pox were not clearly deſcribed before the Arabians, to whom although we have reaſon to ſuppoſe they were known in the year 572, or at leaſt 622 ‡, yet the more general opinion is, that having ariſen firſt in Egypt and the interior parts of Arabia, they were introduced by the Saracens into Spain and other parts of Europe, not before the end of the eleventh, and beginning of the twelfth century ‖. Since this time the diſeaſe has become ſo univerſal, that it is conſidered not only as one which every perſon muſt undergo, at leaſt once during life,—unleſs he may have been affected with it in the uterus,—but is in fact complaint with the nature of which nobody is unacquainted.

* Synonyms. The *Variolæ Arabum* of Mercurialis, *De Morb. Pueror.* c. 2.: Of Boerhaave, *De Cogn. et Cur. Morb.* § 1371.: Of Juncker, Tab. 76.; and of almoſt all the moderns. The *Febris Varioloſa* of Hoffman, *De Febrib.* ſect. i. c. vii.: Of Vogel, *Gen. Morb.* gen. xxxvi. The *Variola* of Sauvages, *Gen. Morb.* gen. 92.: Of Linnæus, gen. 3.: Of Cullen, gen. xxvi.: The *Petite Vérole* of the French. The *Vajuolo* of the Italians.

† De Haën, *Variol. Antiquitat.* and Werlhof. *Diſquiſit. Medic. et Philolog. de Variol. et Anthrac.* and, laſtly, Gruner. *Morb. Antiq.* c. i. *Variol. earumq. inſit.* ‡ Mead. *De Variol. et Morb.* c. 1. *De Orig. Var.* Hom. *Princ. Med.* P. 4. ſect. vii. ‖ Mead. l. c.

159. Small-pox are an exanthematic febrile contagious diſeaſe, of the acute kind, always primary, attended with an eruption of ſmall red puſtules, raiſed on the ſurface, generally phlegmonic, like pimples, which break out firſt on the face, neck, and hairy ſcalp, and after having been diffuſed to the breaſt, ſhoulders, hands, and the reſt of the body, and gradually increaſing nearly to the ſize of a ſmall pea, (as commonly happens), ſuppurate in a few days, and ſhortly terminate in cruſts, which fall off, leaving behind them red marks, that are gradually obliterated, and ſometimes pits, or ſmall cicatrices. I call the complaint *febrile*, becauſe it is generally accompanied with fever. I ſay *generally*, for ſometimes it is ſo mild and benign, that it is neither preceded nor accompanied with any fever, or if there be any conjoined with it, it is ſo ſlight as to be ſcarcely ſenſible: Nor is it perpetually preſent, but comes and goes *, ex-

cepting in the more ſevere caſe of the complaint, attended with a certain degree of malignity, in which a fever more or leſs acute and conſtant accompanies it. I therefore differ in opinion from thoſe who refer ſmall-pox to the claſs of fevers, and particularly to the *contagious ſynochæ* *.

* Sydenh. *Oper.* ſect. 3. c. 2. Huxham's *Eſſays on the Small-pox.* † Marcellus Donatus once ſaw ſmall-pox unattended with fever. Ingraſſias obſerved them in a ſlight degree, and few in number, without fever, as we are informed by Mareſcott, who alſo mentions that he cured two children labouring under ſmall-pox unaccompanied with fever (Mareſcot. *de Variol.* p. 20.). Fantonus alſo ſaw ſmall-pox, or variolous puſtules, which broke out, and came to maturation and exſiccation, without any manifeſt fever (*Diſſert. de Antiq. et Prog. Feb. Mil.* p. 70.). Drelincourt found them prevailing ſo both ſporadically and epidemically, and quotes ſimilar inſtances from Foreſt, Ferdinand, Rhodius, and others (*Diſſ. de Var. et Morb.*). Others record that this happens in the mildeſt ſmall-pox, both ſpontaneous and proceeding from inoculation. It is a very well known fact, that the variolous matter is introduced into the ſkin of thoſe who had already experienced the ſmall-pox; from whence puſtules ariſe, which in appearance, duration, and in the manner in which the inflammation, exſiccation, and ſuppuration take place, completely reſemble ſmall-pox. But, as the internal parts of the ſyſtem are not affected by it, perhaps on account of the diſpoſition to receive the infection no longer exiſting, they are neither attended with fever, preceded, nor followed by it. This frequently happens to women who attend variolous children, who ſit by them, or carry them in their naked arms, or apply their face to that of the patient, eſpecially if they have a very fine ſkin. But it is very frequently found to occur in inoculated ſmall-pox. For the pus which is introduced very frequently affects the ſkin only, raiſing puſtules upon it with-

out occaſioning any fever, a fact which is known to every body, and ſhall be ſpoken of in its proper place. Hux. *On Small-pox.*

160. I have moreover ſet down the diſeaſe as being contagious (159.), becauſe ſound bodies are affected with it by approaching one who has the complaint; by contact; by handling the cloaths, linens, and other things which the infected uſe; by breathing the air pregnant with the variolous halitus; by taking it in along with the ſaliva; by imbibing it through the ſkin; by inoculation; by careleſsly employing a lancet with which a variolous patient had been bled, and which had not been ſufficiently wiped, to open a vein in another perſon *. Small-pox, therefore, do not ſeem to ariſe from errors in diet, nor from the changes of the ſeaſons and air †, but from a peculiar poiſon, or miaſma, which is extremely ſubtile and volatile, and calculated to occaſion inflammation and irritation, and which, when once produced or evolved, continues long in full force, probably floating in the air, or adhering to bodies, and thus gradually entering into healthy people, and infecting them, as it were, ſecretly ‡. It is probable that this happens when the ſmall-pox prevail epidemically, attacking even ſuch as have had no communication with variolous patients.

* Hom. *Princ. Med.* P. 4. ſect. vii. Störck, *Med. Pract.* P. 1. p. 55. Meza, *Comp. Med. Pract.* c. xxi. § 211.

† Caſimir Medicus entertains an oppoſite opinion, for he conſiders ſmall-pox as a ſpontaneous diſeaſe; nor does he ſup-

poſe them to proceed from a ſecret cauſe, although they be propagated by contagion. He compares them with the itch, which, though ariſing ſpontaneouſly from a vitiated ſtate of the fluids, is introduced into ſound bodies by contagion, and he contends that the power of the variolous contagion is very inconſiderable. He aſcribes the epidemic ſmall-pox, like other epidemic diſeaſes, to the changes of the ſeaſons. (*Vid. Comment. de Reb. in Scient. Nat. et Med. Geſt.* ſuppl. 2. ad decad. 2. p. 225.). But the contagion of the itch is contracted by contact alone, not by inhaling the infected air, nor by remaining among people affected with it, nor by being near them, all which ſhews a wide difference between the contagions, and that the power of the variolous contagion is not inconſiderable, but almoſt peſtilential. Nor am I diſpoſed to admit that all epidemic diſeaſes are to be derived from the changes of the ſeaſons only, as not a few of them frequently prevail during oppoſite ſtates of the air, and as there is a great difference between truly epidemic and ſtationary diſeaſes, or ſuch as proceed from variations of the ſeaſons and of the ſtate of the air. The opinion of Caſimir Medicus is adopted by very celebrated authors, who ſeem to renew the old opinion, according to which ſmall-pox are derived from the blood of the umbilical cord not being ſufficiently expreſſed. Time alone muſt determine on the ſucceſs of their attempts in preventing ſmall-pox, as they tell us they have done; I ſhould beg leave, however, to aſk the ſticklers for their prophylactic method, why, as the cauſe of the complaint is co-eval with mankind, Europe and America remained ſo many ages free from ſmall-pox? Why the Chineſe, from whom this prophylactic method is ſaid to have been tranſmitted to us, have not eſcaped the variolous contagion, with which they are very frequently and moſt ſeverely affected? Why in modern times, ſince midwifery has been every where ſo much improved, that the umbilical chord is never tied and cut off, without the blood being completely expreſſed, we are ſtill ſubject to ſmall-pox? Which Mareſcott, public teacher of Medicine at Bologna,

having obſerved to have been univerſally practiſed there for more than ſixty years by the moſt experienced obſtetrical practitioners, without either the number of variolous patients, or the deſtructive tendency of the diſeaſe, being diminiſhed ;—in his treatiſe on ſmall-pox he has ſhewn the futility of the boaſted Chineſe method of preſerving people againſt being attacked with the complaint. Lately, in the month of December 1783, Jo. Babtiſt Frambaglia expreſſed all the blood from the umbilical cord of a newly-born infant with ſuch care, that it remained quite empty between the ligature and the cord. On the following ſpring, he was informed by the nurſe, that the infant had had ſmall-pox, though few in number, and of the diſtinct kind, unaccompanied with fever. In July the ſmall-pox, of a very malignant kind, began to prevail epidemically. Towards the end of Auguſt a daughter of the nurſe's was attacked with diſtinct ſmall-pox, during the exſiccation of which, the ſucking child already mentioned was attacked with minute, clear, confluent ſmall-pox, which proved fatal on the 23d of September, in the year 1784. This ingenious phyſician lamented that his firſt experiment was ſo unſucceſsful, as not even to render mild a diſeaſe which he had hoped to prevent intirely. ‡ Hom. l. c. Tiſſot, *Epiſt. Var. Argum. ad* Haller, p. 6. Ludwig, *Adverſar. Med. Pract.* P. 3. V. i. p. 473.

161. Although it muſt be confeſſed, that the ſeeds of the diſeaſe (160.) are not only contained in the air, and always floating in it,—as it is very evident, from what I have already ſhewn, that they adhere to rags, linens, cloaths, and other things, and may lurk in them a long time in full force, until they are extricated by ſome cauſe, and being taken into ſound bodies by the halitus or contact, occaſion the contagion :—yet ſometimes the ſmall-pox prevail only ſporadically, nay, at times attack a ſingle individual, without any evident cauſe of

the contagion being found. Whether or not does the poiſon, after lurking in the ſyſtem, at length become manifeſt merely by the intervention of ſome exciting cauſe? Or did it already exiſt in the air, but could not be communicated on account of the body not having been prepared for its reception? Perhaps it requires a particular ſtate of the weather and air to become active, or acquire that noxious power by which it appears and is propagated rather at one time than another; or that our bodies ſhould be in a particular condition to be acted upon by the power of the miaſma. Hence we may eaſily underſtand, why, according to the different conditions of the weather, and of the bodies affected, the diſeaſe at one time prevails epidemically, at another ſporadically. For the variolous miaſma, without ſuch a diſpoſition, cannot engender the diſeaſe, not even when inſerted by inoculation, as repeated trials have ſhewn.

162. But, according as the diatheſis of the body and fluids, neceſſary for the reception and evolution of the virus (161.), comes on ſooner or later in life, people fall into ſmall-pox either in infancy, in boyhood, in puberty, or manhood. Nay, even the fœtus itſelf is not ſecure againſt this taint; as it is undeniable that children have been born with the ſmall-pox on their ſkin, or retaining the veſtiges of them, and that, too, notwithſtanding their mothers had not laboured

under the complaint; though this is certainly of very rare occurrence *. It therefore ſeems, that the miaſma has ſometimes paſſed into them without injuring the mother, or that ſhe has been affected at the ſame time: Whence we learn, that pregnant women ought to be carefully kept from ſuch as have the complaint, to prevent themſelves or the fœtus from being affected with the contagion. Nor can a perſon, even when grown up, unleſs he had experienced the complaint already in the uterus, enſure himſelf againſt an attack of ſmall-pox; for not only perſons conſiderably advanced in life, and old people, but even people in a ſtate of decripitude, and almoſt ſuperannuated, have died of this diſeaſe.

* Ludwig (*Adverſar. Med. Pract.* P. 3. vol. i. p. 496.) ſays: "A mother having recovered from ſmall-pox, a month afterwards had an abortive delivery of a child, which ſhewed on its body the remains of the variolous pits." Fouquet alſo (*De la Pet. Vérol.* T. 1. p. 299.) mentions, "that a pregnant woman having been attacked with ſmall-pox, and at length recovering, was delivered of a child upon whoſe ſkin evident ſymptoms of ſmall-pox were ſeen." Dr Wright (*Philoſ. Tranſ.* vol. 1. 1767, P. 2. n. 2.) ſaw an infant born a fortnight after its mother had laboured under diſtinct ſmall-pox, which was covered from head to foot with diſtinct and well-filled puſtules, ſuch as they are generally found to be on the eighth or ninth day in the benign ſmall-pox. The child's mother was a black, born in the iſland of Jamaica, and the child itſelf died three days after. In the Commentaries of the Society of Sciences of Haarlaem, T. 12. there is an account of ſmall-pox happening before birth, communicated to the Society by Joſhua Van Iperen. It is thus recorded by the authors of the Leipſic Tranſac-

tions (*De Reb. in Scien. Nat. et Med. geſt.* v. xviii. p. 596.): "The wife of a celebrated writer, in a ſtate of pregnancy, after attending two children affected with ſmall-pox, without catching the complaint, was brought to bed of a healthy child, in whom, however, traces of ſmall-pox were evidently ſeen. A little before delivery, when the fœtus undoubtedly laboured under the complaint, ſhe had felt a degree of anxiety." Orteſchi (*Méd. Journ.* vol. iii.) not only quotes (*Diar. Med. Bullion.* an 1763,) the hiſtory of a child born with ſmall-pox upon the face, neck, and ſhoulders, but alſo mentions that the ſame thing had happened to his own brother, on whoſe body were found many diſtinct ſmall-pox, moſt of them full of pus, and about the ſize of a pea. His mother, in the laſt ſtage of pregnancy, was brought to bed of another ſon, in like manner affected with ſmall-pox. Roſen (*Malad. des Enfans*, c. xii. p. 5. 18.) makes mention of another child born with variolous cicatrices and cruſts. His mother, during the laſt days of geſtation, conſtantly attended another ſon affected with ſmall-pox. Six years after the reſt of her ſons were attacked with ſmall-pox, excepting the youngeſt, who, having had the complaint in the uterus, remained quite free of it. Feburi ſubjoins to this paſſage, that he had ſeen a child born whoſe body was covered all over with variolous puſtules, which exactly went through their ordinary ſtages. His mother had had the complaint a long time before. Murray (*Hiſt. inſit. Variolar.* P. i.) likewiſe makes mention of a child born with ſmall-pox, whoſe mother, before delivery, had attended another child labouring under the complaint. Frid. Chriſt. Höller (*Obſerv. Med. Chirurg.* obſ. ix.) ſaw a ſtill-born child, covered with true variolous puſtules, whoſe mother never had experienced the complaint. Meade alſo (*De Variol.* c. iv.) mentions a ſimilar inſtance. From theſe facts a convincing proof is given, that the fœtus is ſometimes affected with ſmall-pox, although ſurrounded with a fluid, by which Cotunnius thought it was defended againſt the contagion, on the mother becoming affected. Azzoguidi (*Lettera ſopra il Vajuolo*, p. 6.) makes ſome remarks ſo applicable to the ſubject, that I conſider them as well deſer-

ving to be tranſcribed here. "A certain Neapolitan phyſician has endeavoured to maintain that the fœtus of pregnant women cannot be affected with ſmall-pox. But the obſervations of ſeveral men, eminent for their medical and anatomical ſkill, ſuch as Meade, Hildanus, and others, which he rejected, perhaps after giving them too curſory an examination, give us reaſon to ſuſpect the truth of his opinion, which may be moreover combated, not only by what Marcheſini had an opportunity of ſeeing, but alſo by what was obſerved, in the year 1773, if I miſtake not, at Montpellier, where an infant was born which at the moment of birth appeared covered with variolous puſtules, without the mother having been once affected with the complaint during the whole period of geſtation."

163. They alſo entertain an erroneous opinion who think, that, after once having the genuine ſmall-pox, the diſpoſition of the body to receive them is deſtroyed. For it appears from undoubted facts, and the inveſtigations of medical men of unqueſtionable authority, that not a few, after experiencing the complaint in the natural way, or by inoculation, have afterwards been affected a ſecond, and even a third time. Hence it is evident, that that diſpoſition is not always deſtroyed after once having had the diſeaſe, or, at leaſt, that it may be ſometimes excited again. And, firſt, that no doubt of the fact may remain, I may obſerve, th Diemerbroeck found ſeveral, who had been very completely affected with the ſmall-pox, relapſe into them twice or thrice within the ſpace of ſix months *. But, leſt it be ſuppoſed that in theſe caſes the diſeaſe ſtruck out

again after ſtill continuing to lurk in the ſyſtem, rather than that it returned anew, let us attend to the facts which others have obſerved, and which leave no room for doubt. Mareſcott makes mention of two boys, one of whom had the diſeaſe twice, the other thrice †. And Van Doeveren confirms the fact with regard to ſmall-pox ſometimes returning twice, and even thrice in the ſame perſon, both by his own experience, and what he had learnt from others. He mentions, in particular, the inſtance of his own wife, in whom the complaint took place twice in the courſe of nine years, referring to the teſtimony of Camper, Gummer, Brill, and Swyghuiſen, who were eye-witneſſes of the fact. He likewiſe records the caſe ‡ of a boy, who in the year 1754 had been treated for actual ſmall-pox by Eding, and fell into them again in 1759. Laſtly, he adduces a caſe communicated to him by Swyghuiſen, who, until then, had reſolutely contended againſt the ſmall-pox ever returning, and which convinced him ſo completely of his error, that he no longer entertained a doubt of the fact. The ſame thing happened to a boy a month after he had had the complaint, and to two girls who had had ſmall-pox in the year 1744, and were again attacked with them in 1764, as we are informed by Servans Van de Cupello ‖. Dryfhoult alſo § makes mention of a woman, who, in the year 1755, contracted ſmall-pox by inoculation, and had a ſe-

cond attack in 1764. Likewiſe Aaſkow (*Collect. Soc. Med. Haun.*¶), who had diſbelieved the obſervations of other authors on the ſubject, relates his having obſerved the return of the complaint. Meza and Buckwald, alſo **, attended a woman affected with ſmall-pox, whom the latter had formerly cured of the ſame complaint. Laſtly, Roſen affirms, that the fact appears indiſputable to him from an account, ſubſcribed by two very reſpectable phyſicians, of a perſon being attacked with them, after having already had the complaint by inoculation ††.

* *De Variol. et Morbil. Labor. Hiſtor.* Hiſt. i. p. 346. *et* Hiſt. 8. † *De Variol.* p. 128. ‡ *De Variol. ver. eund. ægr. aggreſſis*, V. T. xii. *Com. Soc. Scient. Harlem. ad an.* 1770, *itemq. Com. Lipſ.* V. xviii. P. 4. p. 586. ‖ *Com. Soc. Scient. Harlem.* T. viii. P. 2. p. 209. to 216. § *Ibid.* p. 260. ¶ Vol. ii. p. 91. ** *Comp. Med. Pract.* faſc. i. c. xxi. § 210. †† *Malad. des Enfans*, p. 250.

164. But, for the ſake of brevity, paſſing over the numerous teſtimonies of foreigners, I ſhall only touch upon a few of thoſe of the Italian phyſicians, that I may not ſeem to loſe ſight of ſuch as are afforded by our own writers. It is not an uncommon thing in Naples, as we are informed by Sarcon * and Moſca †, for the ſame perſon to be attacked twice or thrice with ſmall-pox, and of the confluent kind. In Florence the ſame obſervation holds. Targioni ‡, in the year 1775, ſaw a woman twice attacked with ſmall-pox in the natural way; and on the following

year he publiſhed another account of the return of ſmall-pox. Dom. Juvanelli attended three ſiſters affected with ſmall-pox at the ſame time, who on a former occaſion ‖ had laboured under the genuine complaint, as it was acknowledged to be by the phyſicians who attended them. In like manner, Lilius, in order to eſtabliſh the fact §, publiſhed two complete hiſtories of the return of ſmall-pox in the year 1777. I find nearly the ſame opinion entertained by the ingenious Azzoguidi ¶, profeſſor of medicine at Bologna, who, not contented with having mentioned two inſtances of the return of the complaint, adduces the caſe of an old woman, who, as we are informed by Borelli **, at the age of 118 died of the eighth attack of ſmall-pox. Laſtly, to crown the whole, he mentions the caſe of Lewis XV. who, after experiencing the complaint at the age of fourteen, was afterwards attacked with it at ſixty-four years of age. I might confirm the fact by the publiſhed obſervations of Michael Girard, then reſiding in Padua ††, as well as by other teſtimonies, were I not reſtrained by a great controverſy which ſhortly after aroſe concerning them ‡‡.

* *Iſtor. de' Mali Oſſervati in Napoli*, P. I. p. 58. † *Diſſert. 2. ſull' aria*, p. 106. ‡ *Avis. ſopra la Salut. Uman.* 1775, N. 17. ‖ *Avis. ſopra la Salut. Uman.* an 1776, N. 9. p. 71. N. 10. p. 79. § *Avis. Suddett.* an 1777, p. 167. *et* 1778, N. 36. p. 281. ¶ *Lettera ſopra il Vajuolo ec.* p. 7. ** Cent. 3. obſ. 10. †† *Ritorno del Vajuolo*, &c. 1776. ‡‡ *Giornale di Medic.* di P. Orteſchi, T. iv.

165. It is a certain fact, that ſmall-pox, like

other diſeaſes, during the prevalence of the ſame epidemic, and in the ſame family, varies in different reſpects, and in ſeverity of the ſymptoms. For, as will afterwards appear, there are many varieties of the complaint, taken from the number, form, and heat of the puſtules, or from their progreſs, danger, and malignity. This alſo appears in the ſmall-pox communicated by inoculation, which, although the very ſame matter has been employed, often appear to differ greatly from one another. Nay, it is a fact well known to all impartial practitioners and inoculators, that the *diſtinct* and *benign* ſmall-pox are not unfrequently produced by the matter of the *confluent*; and that, on the other hand, the *confluent* and *malignant* kind proceeds occaſionally from the contagion of the other. Hence it neceſſarily follows, that the variolous poiſon is the ſame in its nature, and that, if there is ſometimes any difference, it is only in the degree of its virulence. Although I know from experience that its effects are in no ſmall meaſure increaſed and varied, according to its quantity, and the different ways in which it is received: but that its principal varieties proceed from the patient's temperament, habit, age, the condition of the fluids, the kind of diet, manner of life, the ſeaſon of the year, or its being complicated with other diſeaſes. Although Gatti ſeems to think otherwiſe with regard to the temperaments and the habit of body, when he ob-

ſerves, " that this diſeaſe occurs alike ſlight or virulent, dangerous or benign, both in robuſt and weak habits, in meagre and corpulent ones, in warm and cold, choleric and phlegmatic temperaments, and in humid and dry habits *." It is conſiſtent with reaſon, however, that variolous epidemics, ſometimes benign, and ſometimes malignant, are in a great meaſure owing to the preceding ſtate of the weather, to a particular condition of the ſolids and fluids, to ſtationary diſeaſes, and ſometimes to want of proviſions, to the abuſe of heating remedies, or to an improper plan of cure and regimen having been employed †.

* *Nouvell. Reflexions*, p. 25. † Störck, *Inſtruz. Pratiq.* P. 1. p. 255. *Caſim. Med. Com. Lipſ. citat.* ſuppl. 2. decad. 2. p. 225. Sydenh. l. c.

166. But of the numerous varieties of ſmall-pox which writers have agreed upon, I ſhall proceed to enumerate the principal ones, in the order that appears to be the moſt natural. Concerning the diviſion of the complaint into *ſporadic* and *epidemic*, as being in common to it with other acute diſeaſes, it would be ſuperfluous to ſay any thing. It will be better to proceed to the varieties derived from the origin and nature of the complaint. When ſmall-pox, therefore, ariſe ſpontaneouſly, or naturally, or are occaſioned by art, or inoculation, they are properly divided, firſt into *ſpontaneous*, or *natural;* and next, into *artificial*, or by *inoculation*. We ſhall treat of

the firſt in particular here, and afterwards make ſome obſervations upon the other apart. But they muſt be both conſidered either as *true*, *genuine*, and *legitimate*, or *ſpurious*, *baſtard*, or *illegitimate*. It is proper, therefore, to deſcribe the genuine ſpecies, before proceeding to the ſpurious, that their diagnoſis may appear the more evident. Again, the genuine kind, whether ſpontaneous or artificial, according to the appearance of the puſtules, their disjunction, coherence, communication, and greater or leſs propenſity to ſuppuration, is very properly divided into *diſtinct*, *coherent*, and *confluent*. Theſe are called *diſcrete*, or *diſtinct*, which, whether few or numerous, are disjoined from each other, ſo as to leave an empty ſpace, and, thus ſeparated, are raiſed into ſmall tumours, appearing prominent above the ſkin. Next to the *diſtinct* are the *coherent* ſmall-pox, which, in appearance, are very like the diſtinct ones, and ſo contiguous and crowded together in different parts, that many of them adhere to each other like cluſters of grapes. But when theſe puſtules appear flatter and ſmaller than the diſtinct ones, and ſeveral of them run together, exhibiting as it were large bliſters, different in form and figure, and covering the face in particular, they then obtain the name of *confluent*. The *coherent* ſmall-pox appear to hold an intermediate rank between the *diſtinct* and *confluent*, or, as is more generally ſuppoſed, form a particular variety

of the confluent. Yet all theſe diſtinctions, particularly the *diſtinct* and *confluent* ſpecies, although in their *eſſence* and *nature* they do not differ at all, ſtill are attended with certain remarkable ſymptoms by which they may be eaſily diſcriminated *. But the diſtinct, coherent, and confluent ſmall-pox, are generally recogniſed by the number, diſtinctneſs, contiguity, or confluence of the puſtules, particularly on the face; and hence we infer that the diſeaſe is more or leſs dangerous †.

* Sydenh. *Oper.* ſect. 3. c. 2. † De Haën *Feb. Divis.* p. 99.

167. But before entering on the ſubject, it will be proper to call to mind what I have already mentioned (11.), namely, that there are generally four diſtinct ſtages in ſmall-pox. The firſt is named by Sydenham the *ſtadium ſeparationis* *, by others ſimply the *apparatus exanthematum* †, or the *ſtatus contagii* ‡, or *ebullitionis*, or *effervescentiæ* ‖, or *germinationis* §. It includes all the period preceding the eruption from the firſt attack of the fever. Sometimes, however, this ſtage is uncertain, and often wanting, becauſe the period of the contagion is ſpent without any remarkable fever, and the diſeaſe commences with the eruption ¶. The other is commonly called the *eruptive*, or *inflammatory* ſtage **, and appears ſometimes on the ſecond day, ſometimes on the third, and ſometimes even later. De Haën ſaw a girl while engaged day and night in

attending patients labouring under ſmall-pox, who ſtruggled with the fever and ſymptoms of the firſt ſtage for fourteen days, before the appearance of the eruption ††. Although in general, therefore, no certain time can be aſſigned for the firſt appearance of the eruption, the ſecond ſtage invariably commences when the ſmall-pox appear on the face and the reſt of the body. But the third ſtage takes place when the puſtules are inflamed, increaſe, and ſuppurate; for which reaſon it obtains the name of the *ſuppuratory* ſtage ‡‡, or that of the *maturation* ‖‖. The ſuppuration being at length terminated, or the pus concocted, if the ſmall-pox are of the kind in which ſuppuration occurs, they dry, and a deſquamation takes place, when the fourth ſtage, called that of the *exſiccation*, or *declenſion* §§, or *prolapſus* ¶¶, puts a period to the diſeaſe.

* L. c. † Morton, *Exerc.* 3. c. 6. ‡ De Haën, *Rat. Cont.* T. 1. c. v. § iii. *et* vi. Schacht, *Inſt. Med. Pract.* c. xiii. p. 51. ‖ Meza, *Comp. Med.* faſc. 1. c. xxi. § ccvii. § Sidobre, *De Variol.* ¶ De Haën, l. c. ** Schacht, l. c. †† L. c. § vii. n. 3. ‡‡ Schacht, l. c. ‖‖ Morton, l. c. §§ *Id. ib.* ¶¶ Schacht, l. c.

168. The diſtinct ſmall-pox are generally reckoned *benign* and *regular*; on the contrary, the confluent are reckoned *malignant* and *anomalous*. But that ſpecies of the complaint is called *regular* which obſerves the uſual and mild courſe; while they are called *anomalous* when they recede from that order, both in the fever, nature, and

eruption of the puſtules, and in their colour, in the appearance of the cruſts, and in the greater malignity of the ſymptoms, and in the periods of the ſtages, which are changed in various ways *. The ſmall-pox which Sydenham † obſerved at London in 1667, 1668, and 1669, and accurately deſcribed ‡, were of the firſt kind; thoſe which he obſerved in 1670, 1671, and 1672, were of the ſecond. But it has been diſcovered, by careful inveſtigation, that the diſtinct kind is ſometimes more dangerous and malignant than the confluent ‖; and that anomalies are not ſo peculiar to the confluent ſmall-pox, as not ſometimes to occur in the diſtinct kind, or be abſent from the confluent; which, when it happens, they then appear to be in ſome meaſure *benign* and *regular*. They are, therefore, both with more propriety ſubdivided into *benign*, or, as Meade § calls them, *ſimple*, and *malignant*. According to Meade, the former appear attended with a ſimple fever, which does not laſt long, they quickly attain maturation, a few days afterwards are converted into pure pus, and fall off in ſcales. The latter appear accompanied with a malignant fever ¶, are ſlow of ariving at maturity, and do not ſuppurate at all; or, if they ſuppurate in ſome meaſure, the febrile heat never abating, they paſs into ſcales, not without being attended with great uneaſineſs.

* De Haën, *Divis. Feb.* p. 91. 99. † *Oper.* ſect. 3. c. 1. ‡ Sect. v. c. 4. *et Diſſert. Ep. ad* Gul. Cole. ‖ Meade, *De Variol.* c. 2. De Haën, l. c. § Meade, *ibid.* De Haën, l. c. p. 100. ¶ It muſt be obſerved, that Meade here conſiders the fever as being diſtinct from the ſmall-pox, and aſcribes their malignity to that with which the other is accompanied; while the fact ſeems to be the oppoſite of this: for I conſider it as being more probable that the fever is occaſioned and prolonged by the malignity of the ſmall-pox. Tiſſot, deſcribing the malignant ſmall-pox in general, obſerves: "Let it ſuffice that extreme debility, very ſmall pulſe, a conſtant fever, which is aggravated in an irregular manner, ſlight, but conſtant delirium, very ſmall, watery, ichorous, black puſtules, cutaneous ſpots, blood diſcharged univerſally from the pores, together with heat, conſtant anxiety, loathing of food, and inſenſibility, are the unequivocal criteria of malignity in ſmall-pox.

THE BENIGN DISTINCT SMALL-POX.

169. *The Firſt Stage.*—But an idea of the benign or malignant nature of the ſmall-pox cannot be better conveyed than by pointing out the marks peculiar to each variety, in ſuch a manner that the benign may be readily diſtinguiſhed from the malignant ſpecies. I ſhall therefore begin with the *benign diſtinct ſmall-pox.* Theſe are ſometimes ſo mild, as to break out without any fever either before or after the eruption, or at leaſt are accompanied with a very ſlight and ſcarcely perceptible one, and hardly any other ſymptom *. And Sydenham remarks, that that happens in the caſe of too lax a diatheſis of the blood, in which, as he obſerves, frequently the whole period of the ſeparation gradually paſſes away, without any

remarkable illneſs †. More frequently, however, it is for a few days preceded by a doubtful ſtate of health ‡; after which the diſeaſe commences with fever, ſometimes greater, ſometimes leſs, according as the patient's temperament, the diatheſis of the blood, the habit of body, the ſtrength, and other circumſtances, are more or leſs diſpoſed to it. The patients are firſt affected with rigor and ſhivering, next grow very warm, thirſty, anxious, and reſtleſs; they have an excruciating pain in the head, back, and joints, but not conſtantly preſent; they are ſick, have an inclination to vomit, or actually vomit, and perceive a ſenſe of pain in the epigaſtrium, and under the enſiform cartilage, on the part being preſſed. To theſe ſymptoms are added, a certain degree of ſtupor, or drowſineſs, a great propenſity to ſweating in adults, and to epileptic fits, or convulſions, in infants and young people. If infants or children are ſeized with convulſions, or eclampſia, after dentition, we may be certain, as Sydenham tells us ‖, that the ſmall-pox are approaching, and will generally appear in a few hours, that is, if the convulſions happen, as is generally the caſe, in the evening, they will appear next morning; and that ſuch ſmall-pox are generally benign, large, and diſtinct, very ſeldom confluent. But others eſteem this prognoſtic as fallacious §, eſpecially in certain epidemics, particularly when the epileptic

ſits laſt long; for in that caſe they frequently cut ſhort the patient's life before the appearance of the eruption. But the ſmall-pox ſucceeding to comatoſe affections are generally confluent.

* Huxh. *Eſſays on the Small-pox.* † Sydenh. ſect. 3. c. 2. ‡ Tiſſot, *Epiſt. Var. Arg. ad* Haller, p. 6. ‖ Sydenh. l. c. § De Haën, *Divis. Feb.* p. 98.

170. With reſpect to the fever, it obſerves the type of a continued remittent, and has ſtated acceſſions and remiſſions. It generally remits in the morning, but in the afternoon, and evening, it is aggravated in all its ſymptoms, until a little before the eruption, or, as is more frequently the caſe, after it has begun, it no longer continues to rage. Sometimes theſe acceſſions and remiſſions are either wanting, or are not ſo manifeſt; but in that caſe the pulſe is regular, ſtrong, and great; likewiſe the heat is univerſally diffuſed, and the urine is red and thick; all which are ſymptoms of the prevalence of nature. Beſides, ſome aſcribe certain other ſymptoms to this ſtage, as watching, delirium, ſhining and watering of the eyes, cough, and a trickling of blood from the noſe *. Others add coma, ſubſultus tendinum, reſtleſſneſs, ſickneſs †, nay, ſometimes ſneezing, the flow of the menſes, acrid thinneſs and diſſolution of the blood, coſtiveneſs in adults, and diarrhœa in young people ‡; and ſometimes colic, nay, nephritic and pleuritic pains ‖. But theſe ſymp-

toms generally take place when the diſeaſe is uncommonly violent, particularly when it is of a doubtful nature, and accompanied with any malignity, as Morton very properly remarks §.

* Ponticell. *Infortun. del Vajuolo*, c. 2. † Morton, l. c. *Exercit.* 3. *De Appar. Variol.* c. vii. ‡ Richa once obſerved a voriolous epidemy, which began with looſeneſs, and was all along attended with it, and which had a ſucceſsful termination; whether it happened in conſequence of its being combined with a colluvies of the *primæ viæ*, or from a portion of the variolous matter paſſing off in that way, *Conſt. Epid. Taurin. an.* 1770, § xv. Vogel, alſo, ſaw an inſtance of a ſalutary diarrhœa continuing from the commencement to the eleventh day of the diſeaſe; but that which came on later proved fatal, *V. Com. Lipſ.* V. 7. P. 1. p. 125. ‖ Schacht, *Inſt. Med. Pract.* c. xiii. § iv. § L. c. *Exerc.* 3. c. vii.

171. *The Second Stage.*—Frequently towards the end of the third day, more frequently about the beginning of the fourth, ſometimes a little later, very ſeldom ſooner, the diſtinct ſmall-pox begin ſparſely, firſt upon the face, neck, cheeks, forehead, lips, breaſt, and arms, having the appearance of ſmall points, generally of the ſize of the pricks made by pins, and of a red colour, ſhortly afterwards riſing into ſmall diſtinct puſtules, raiſing the ſkin, particularly towards the end of the fourth day, but much more on the fifth. From the face they ſpread ſucceſſively, but gently, to the belly, back, ſhoulders, hands, and lower extremities. They aſſume a round figure, and exhibit a ſmall, hardiſh tumour, which

does not yield to the touch, and is of a dark red colour. Generally within a ſingle day they diffuſe themſelves over the whole body. It ſeldom happens that they are increaſed in number on the following days. Next day after the eruption, their baſe becomes enlarged, and on the third day, beyond which the eruption ſeldom continues, they terminate in a point *. At this period, alſo, there is a ſlight degree of pain and inflammation in the throat, a few puſtules breaking out there. The pain of the puſtules increaſes as the ſmall-pox arrive at a height. They arrive at maturation, as I have ſaid, in a gradual manner; and while moſt of them are increaſing in bulk, other ſmaller ones, which had broken out at firſt, are gradually obliterated, as if the matter paſſed to nouriſh and fill the greater ones; nor do they return any more, at leaſt in the ſame place †. And while the ſmall-pox are riſing into a greater head, and their baſe is enlarged, the ſurrounding ſkin becomes tenſe, and is ſuffuſed with redneſs. Upon the tops of them frequently ſmall veſicles are obſerved, containing a thin limpid fluid, which gradually becomes yellow, and at its proper time is converted into true pus.

* Morton, l. c. *Erupt. Variol.* c. viii. † De Häen, l. c.

172. Among the marks of benignity in this ſpecies of ſmall-pox (170. and 171.), the principal and peculiar one is, that on the day of the eruption, namely, on the third or fourth from

the beginning of the diſeaſe, the fever of a ſudden ceaſes, with all its ſymptoms; or at leaſt ſubſides in ſuch a manner, as on the fifth and ſixth day ſcarcely to be perceived. Nor is it ſurpriſing, that on the variolous matter being intirely forced to the ſurface, the internal parts ſhould be freed from its irritation, in conſequence of which the fever and other ſymptoms altogether diſappear. Hence the patients being freed from the fever, pains, ſickneſs, watching, delirium, and other ſymptoms, which attended the fever, not only feel themſelves well, but alſo recovering their appetite and ſtrength, become chearful and jocular, except that adults continue to be exhauſted with copious ſweats, although they uſe thin cloathing, and are ſtudious to avoid whatever may occaſion them. But theſe ſweats do not altogether deſiſt, until the ſuppuration and maturation of the puſtules. Then they ſtop, merely of their own accord *, in conſequence, perhaps, of the pores being compreſſed by the inflammation and ſwelling of the ſkin.

* Syden. l. c. Ponticel. l. c.

173. *The Third Stage.*—About the end of the ſixth day, or in the beginning of the ſeventh, from the commencement of the diſeaſe, that is, on the third or fourth day of the eruption *, the pulſe becomes ſtronger and more hurried, eſpecially in the evening, and the heat of the ſkin greater, ſo that the fever, which had departed intirely, appears

ot return, or, if it had only lain dormant, is revived. Nay, ſuch is the commotion ſometimes, that the patients after a ſhort ſleep ſtart out of it, mutter to themſelves, and are extremely reſtleſs. But this exacerbation is occaſioned by the commencing ſuppuration of the puſtules, after which it ceaſes intirely. For then the puſtules are inflamed, and increaſe, the intervals begin to be more manifeſtly red and ſwelled, accompanied with an uneaſy ſenſation of tenſion and lancinating pain. This is followed by dejection, toſſing of the body, and a ſenſe of heat both internally and externally. But the ſmall-pox, which are perfectly round and diſtinct, without being accompanied with any other ſpots or eruptions, on the firſt day of the eruption exhibit a red margin, are full and white upon the top, and contain a thin fluid. On the ſecond day they become broader at the baſe, terminate in a peak, and are leſs pellucid. Laſtly, on the third day, which is generally the laſt in this ſtage, the fluid being converted into pus, ſoon after a deſquamation takes place, the patient's indiſpoſition, and every other troubleſome ſymptom of the ſuppuration in the mean time ceaſing †.

* In the mildeſt diſtinct ſmall-pox, all the ſtages are generally ſhorter, none of them, for the moſt part, exceeding three days; ſo that on the ninth day of the diſeaſe, the puſtules generally begin to dry and fall off, particularly on the face.

† Morton, *Exerc.* 3. c. ix. p. 106.

174. But as the firſt ſymptoms of ſuppuration

occur in the puſtules of the face, immediately on its commencement, the whole face becomes enormouſly ſwelled, and, as the ſtage advances, the eye-lids alſo become ſwelled and inflated, ſo that being brought together, they ſhut up the eyes intirely, reſembling an inflated and pellucid veſicle drawn over them. It ſometimes happens that the eyes are cloſed up before this, when the puſtules, at the beginning of the eruption, aſſail the eye-lids, and the eyes themſelves, in great numbers. After the face, the hands next ſwell, and the fingers become tenſe, on account of the inflammation occaſioned by the puſtules. This happens only when the ſmall-pox are numerous; for, when they are few in number, they ſcarcely occaſion any fever, or uneaſineſs, nor are the eyes cloſed in conſequence of the ſwelling of the face and eye-lids. But when there is a very copious eruption, the puſtules are then not very prominent, but become gradually flatter, and are obſerved to be ſomewhat depreſſed in the middle. They are otherwiſe uniformly ſwelled *, and, attaining their full ſize, become ſometimes as big as a pretty large pea. They are laſtly filled with a yellow fluid, which is truly purulent, their baſe at the ſame time being ſurrounded with a red circle, which is the beſt proof of ſuppuration, and often being accompanied with an uneaſy itching, on which account children's hands ought to be wrapped up in very ſoft bags,

that they may not tear the puſtules and ſkin with their nails.

* De Haën, l. c. p. 94.

175. On the eighth or ninth day of the diſeaſe, the puſtules begin to grow of a dark colour, firſt on the face, and then in the neighbouring parts, particularly in the centre or apex, where they open and pour out a yellow, glutinous matter, in colour and conſiſtence not unlike honey, or the humour of the eyes *, which gradually becoming hard, appears like concrete gum-arabic. After this, from being ſmooth they become rough, and whatever redneſs was in them before becomes white, paliſh, and yellow, which is the termination of complete ſuppuration. The fever then, if any had ariſen in conſequence of the ſuppuration, reſembling the type of a remittent or intermittent, on the cauſe ceaſing, again diſappears, frequently a gentle ſweat breaking out all over the body. While on the face and trunk they become of a dark brown, or yellow, and rough, the reſt on the limbs appear full of pus, and ſomewhat depreſſed; neither becoming rough nor drying. It is proper to obſerve, however, that during the period of ſuppuration, the more genuine and benign the ſmall-pox are, the brighter and more ſhining is the colour of the interſtices, being like that of damaſk roſes.

* Sydenh. l. c. Ponticel. l. c.

176. *The Fourth Stage.*—On the ſuppuration being perfected, the ſwelling of the face begins to ſubſide, which happens generally on the tenth or eleventh day at fartheſt. The ſwelling paſſes from the face to the hands and feet, becauſe, as the eruption is generally ſlower of taking place in them, ſo alſo the inflammation and ſuppuration of the puſtules take place there laſt. In the mean time the puſtules of the face and upper parts of the body having become ripe, now dry, and the cruſts begin to fall off, ſo that many of them on the twelfth or thirteenth day, others on the fourteenth or fifteenth, are obſerved to have become completely dry, and converted into cruſts. But the puſtules on the extremities, becauſe they are later of breaking out and ſuppurating, ſtill require one or two days to dry. In general, however, being filled with pus, and becoming white, they rather burſt than dry, contrary to what happens on the face and elſewhere. The puſtules being at length dried, and falling off, are at length ſucceeded by mealy ſcales, which, on ſeparating, ſometimes leave pits in the ſkin. For when cruſts of the ſmall-pox firſt ſeparate, no hollow is found in the ſkin, but there rather remains a ſlight depreſſion in their ſeats. But when the ſcales which I have mentioned fall off, not only that depreſſion diſappears, but alſo the ſkin itſelf is found covered with pits; although in the diſtinct and benign ſmall-pox it

very ſeldom happens that any ſuch marks are left conſpicuous or of long duration, excepting a few red ſpots, which always remain about two months, before the ſkin recovers its former white colour *. Laſtly, it is to be obſerved, that during the whole courſe of the diſeaſe the belly is either bound, or ſtools occur very ſeldom, without any bad conſequences ariſing from it †.

* Sydenh. l. c. † *Id. ib.*

177. Such is the common courſe of the diſtinct and benign ſmall-pox. It muſt be confeſſed, however, that they are ſometimes ſubject to ſlight varieties, and in ſome meaſure ſwerve from their uſual mode of proceeding. But this does not alter either their nature or their termination, if they are properly treated. In the firſt place, the diſtinct ſmall-pox ſometimes occur retaining the nature of the benign kind, but in ſome meaſure differing from them, on account of the greater length of the ſtage of maturation. For the puſtules, on the firſt or ſecond day of the ſuppuration, become white, but, on account of containing a ſmaller quantity of fluid, the apices appear ſomewhat more depreſſed; nor are they filled, or riſe to a point, before the third or fourth day; and, laſtly, they begin to grow yellow on the fifth. But, like the benign ones, they are altogether free from the fever, ptyaliſm, great diſcharge of urine, or ſwelling of the extremities, which are marks almoſt peculiar to the malignant

and confluent kind, and they undergo this change during the period of maturation only. It is, moreover, proper to obſerve, that the ptyaliſm, which at other times, on the eruption commencing, ſupervenes in the confluent kind, and is, as it were, its peculiar mark;—is occaſionally obſerved in the diſtinct kind, as we are informed by Sydenham * and De Haën †, and, on its coming on, that the want of the diarrhœa is ſupplied, and ſervice done by it ‡. But it appears that both may be truly ſaid of the diſtinct ſmall-pox, not of the benign kind; for in the malignant kind the patient is only troubled with a diarrhœa, and, if it is deficient, the ptyaliſm will fully ſupply its place.

* *Oper.* ſect. 3. c. 6. † L. c. p. 97. ‡ Tiſſot, l. c. p. 44.

THE MALIGNANT DISTINCT SMALL-POX.

178. HITHERTO I have treated of the benign diſtinct ſmall-pox; I ſhall now proceed to the malignant kind: for I have already obſerved (168.), that the diſtinct ſmall-pox are ſometimes attended with marks of malignity and danger. When that happens, they are generally attended with nearly the ſame ſymptoms, which I have already deſcribed as accompanying the benign ſpecies (168. 169.), but more violent in degree. In the firſt ſtage there is a more diſtreſſing pain in the head and loins; there is greater debility, anxiety, reſtleſſneſs, ſtupor, and alienation of

mind, together with nauſea, vomiting, and other ſymptoms, either more troubleſome, or more irregular, and repugnant with one another, immediately giving reaſon to ſuſpect its pernicious and malignant nature. This ſuſpicion is increaſed, and almoſt confirmed beyond a doubt, particularly by obſtinate watching and delirium, or on the other hand by deep ſleep, ſubſultus tendinum, trembling of the limbs, languor, and a diſpoſition to faint, and eſpecially by irregular, quick, laborious reſpiration, accompanied with frequent ſighing. The fever alſo is very different from that in the benign kind. For it is either more ardent, like a continent one, more conſtant, and accompanied with a quicker and ſtronger pulſe at the very beginning *; or, on the other hand, it is in appearance ſlighter, attended with a pulſe not very quick, but ſmall, weak, and irregular, mild heat, either no thirſt, or very little, although the tongue is apt to become dry. In the mean time, on the ſecond or third day of the diſeaſe, the miliary eruption, or petechiæ, or livid ſpots, break out on the neck, breaſt, and arms, which more manifeſtly point out the malignity and ſeverity of the diſeaſe, with which the ſmall-pox are combined. But if thoſe eruptions do not break out in the firſt ſtage, they will certainly appear in that which immediately follows, that is, during the actual efflorescence of the ſmall-pox. To theſe ſymptoms are added, a copious diſcharge

of thin watery urine, ſometimes ſo acrid as to irritate the bladder and urethra †, or turbid, but not depoſiting a ſediment.

* Ponticell. *Infort. del Vajuol.* c. 3. † *Id. ib.*

179. The eruption, as in the benign diſtinct ſmall-pox, commences on the fourth day, but the puſtules come out ſlowly and difficultly ; nor do they obſerve the ſame order as the benign diſtinct ones. For thoſe which appeared on the fourth day are gradually ſucceeded by others on the fifth or ſixth ; while, in the benign kind, almoſt the whole eruption is generally completed in twenty-four hours. But the puſtules themſelves, although diſtinct, differ much from one another in ſize, figure, and colour. For ſome are greater, others ſmaller ; ſome peaked, others obtuſe, and depreſſed in the middle, and are therefore called *umbilicales* ; ſome paliſh or browniſh, others pellucid, and containing a very thin fluid. Moſt of them occaſion none, or very little pain, contrary to what happens in the benign kind ; in place of which they are often attended with intolerable itching. But according as the ſpots break out with difficulty, ſlowly, and irregularly, they are ſlower of arriving at their height, their baſes are longer of being extended, and they do not ſo ſoon terminate in a peak. Neither does the fever, as in the benign kind, ceaſe on the eruption taking place ; nor does it receive any remarkable relief, but remains conſtant, nay, is frequently aggravated

with all the ſymptoms; and this ſeems to conſtitute the principal characteriſtic mark of malignant ſmall-pox, and with reaſon. For it is probable, that either the quantity of the poiſon is ſo great, or ſuch is the vitiation of the blood and other fluids, induced by it, that even after a very copious eruption has broken out on the ſkin, it does not occaſion the total expulſion of the virus; but great part of it remaining in the ſyſtem affects all the ſolids, and the viſcera themſelves *, corrupting almoſt all the fluids, in conſequence of which it happens, that not only the fever is kept up, but alſo very bad ſymptoms ariſe, or ſuch as are preſent are greatly aggravated.

* It is a queſtion, whether the viſcera are liable to ſmall-pox? Haller, in his hiſtory of the variolous epidemy which prevailed in 1735, towards the end of it obſerves: "I never found in a dead body the puſtules penetrating deeper than the pharynx, or affecting the ſtomach or inteſtines, or other viſcera. Tiſſot alſo (*Epiſt. var. Argum. ad Haller.* p. 46. *ed. Ven.* 1774.), in four dead bodies, could find no mark of the internal parts having been affected with ſmall-pox. But De Haën (*Rat. Cont.* T. i. c. v. §viii. N. V.), taught by experience, is of opinion that the ſmall-pox happen internally, although they are not diſcovered in all dead bodies; and indeed they are recorded to have been ſometimes found internally by other men of learning and experience. Fernelius (*Lib.* 2. *De Abdit. Rer. Cauſſ.* c. 2.) obſerves: "It has been frequently found, that in ſome who had died of the ſmall-pox, the liver, ſpleen, lungs, and all the internal viſcera in the ſame manner as the ſkin, were covered with very foul open puſtules. Ballonius tells us, that in a certain knight, who died of the ſmall-pox, he found the internal viſcera *full of tubercles* (*Epid. et Ephem.* l. 2. p. 207.). Horſt

(*Inſtit. Med. Diſput.* 3. *Addit.* 1. *Ep. ad* Henric. Arniſæum, *Op.* T. i. p. 140.) mentions, that in a nobleman, affected with this complaint, not only the whole external ſurface of the body was beſet with ſmall-pox, but likewiſe the internal viſcera abounded with theſe puſtules. Pary alſo in two girls had an opportunity of ſeeing the internal viſcera covered with dry puſtules, ſuch as break out on the ſkin (*Lib.* 19. C. 1.). Laſtly, theſe facts are confirmed by Meade (*De Variol.* c. 3.), who found the lungs, brain, liver, and inteſtines, ſometimes covered with puſtules. As I find the higheſt medical authorities ranked on both ſides of the queſtion, it is a difficult matter to determine which of their opinions we ought to adopt.

180. But if, as ſometimes happens, the puſtules, in ſize, figure, and colour, ſeem to reſemble the benign ſmall-pox, ſtill they occaſion apprehenſion, in conſequence of the immoderate looſeneſs, the ſweating attended with no relief, the delirium, watching, and other unfavourable ſymptoms, leſt about the beginning of the ſuppuratory, or third ſtage, the patients, as too often happens, be ſuddenly cut off by ſpaſms, or profound lethargy, or ſome other terrible ſymptom. Or even unleſs petechiæ, or livid ſpots, or the miliary eruption, have already appeared in the firſt ſtage, ſuch eruptions attach themſelves to the ſmall-pox on the ſecond day of the efflorescence, and the interſtices, eſpecially on the neck, breaſt, and arms, if attentively obſerved, are found to abound with them. Nor are there wanting other ſymptoms of malignity, as weak pulſe, debility, fainting, ſpaſms, men-

tal imbecility, and the like *, frequently portending death. Nor is it ſurpriſing, when, in addition to the variolous virus, the petechial or miliary one, or both together, are joined, increaſing the magnitude of the danger. It is of conſequence alſo to know, that in the malignant diſtinct ſmall-pox, the face and eye-brows are ſometimes ſo ſwelled, as to cloſe the eyes ſooner than in the benign kind, and the voice becomes much more hoarſe.

* Morton, *Exerc.* 3. c. vi. vii. viii.

181. In the mean time, the variolous puſtules, attended with a fever more or leſs ſevere and conſtant, gradually increaſe until the eighth day, and attain their height; when ſuppuration, or the third ſtage, takes place. It frequently happens at this time, as I have already obſerved, that ſuddenly ſpaſms, and diſtenſions of the nerves, or lethargy, or other ſymptoms threatening death, ſupervene *. And it is a mark almoſt peculiar to this ſpecies of ſmall-pox, that they very ſeldom, or very ſlowly, arrive at maturity †. And although, during the ſuppuratory ſtage, they are ſometimes inflamed, attended with violent fever and pain, and a frequent ſenſation of pricking is felt internally, intimating to a certainty that they are making an effort towards ſuppuration;—nevertheleſs they do not maturate, the efforts of nature being rendered completely abortive. When theſe ſymptoms happen without a good ſuppura-

tion being obtained, then delirium, or coma, or anxiety, with a peripneumonic oppreſſion at the cheſt, or an anginous ſuffocation, and, laſtly, ſudden death ‡, generally follow. Sometimes, however, the fever is moderate, and the ſuppuration, however lingering, goes on well, and is brought to a concluſion. After this, at length a proper exſiccation, as in the benign kind, takes place, and the patients are thus reſtored to health ‖. To the malignant diſtinct ſmall-pox ought to be referred, the anomalous ſmall-pox of the years 1670, 1671, and 1672, named by him *black* ſmall-pox §. Theſe were diſtinct, but generally broke out on the third day, nor did they riſe to the ſame ſize, in the progreſs of the diſeaſe, as the benign diſtinct kind, but were rougher, and towards the end of the complaint, after maturation, they very frequently became black. Sometimes, although the eruption was very ſparing, they were accompanied with ptyaliſm.

* *Id.* l. c. p. 80. † *Id. ib.* ‡ Ponticel. l. c. ‖ *Id. ib.* § Op. ſect. iii. c. vi. p. 228.

182. Beſides, there is a particular kind of diſtinct ſmall-pox, partly benign, partly malignant. In it the ſmall-pox, at the beginning of the eruption, appear not only diſtinct, but in their figure, colour, and in their ordinary termination, likewiſe benign; nor does any ſymptom of malignity precede, nor afterwards accompany them.

On the eruption taking place, however, they aſſume a new diſpoſition, and grow malignant; for they then become low and depreſſed, nay, they ſuddenly put on a livid colour. But, on the ſuppuratory ſtage commencing, they dry, become white on the apices, and no longer contain any fluid; nor is the want of them ſupplied by any ſubſidiary evacuation; for there is no diſcharge of ſaliva, or urine, in them, by which, as in the confluent kind, the exuberant part of the morbid fluid, on retiring into the ſyſtem, is forced out; nor does any ſwelling of the extremities ſupervene, by which the matter retained is collected together and depoſited elſewhere, as in other malignant diſeaſes. Sometimes, as Meade remarks*, this kind of ſmall-pox breaks out without much fever, and with little pain, ſo that they ſeem to be free of any danger. But this appearance of benignity is intirely deceptious. For, in the third ſtage, when they ought to ripen, the efforts of nature ſuddenly becoming too weak, no ſuppuration takes place. Hence the fever is aggravated, and delirium, together with difficulty of breathing, ſupervening, the patient is in a ſhort time cut off. Not unfrequently they are combined with petechiæ, or other bad eruptions, in conſequence of which they acquire that malignity which they would otherwiſe have wanted. At other times, on the eruption being brought to a proper termination, they run into

one another, or at leaſt mutually adhere; and thus, from being diſtinct and benign, which they were at firſt, they degenerate into confluent, and often into malignant ſmall-pox. Sometimes, alſo, the fever,—which before the eruption took place was benign and mild, and afterwards ſeemed to intermit, or at leaſt to abate conſiderably, as in the benign kind,—towards the end of the eruption, laying aſide its appearance of benignity, watching, delirium, and hemorrhages come on, or a diſcharge of urine, and other ſymptoms of malignity. But in this kind of ſmall-pox the fatal termination is neither ſo rapid, nor ſo inevitable, as in the primary malignant ſmall-pox, as more eſcape from it. But a few of thoſe who cannot withſtand the violence of the diſeaſe, generally die about the eleventh or twelfth day, which proves fatal, alſo, in the confluent kind †. But if any of them are preſerved, no maturation taking place, they linger with much difficulty, and like people on the point of death, through the fourth ſtage, or that of the declenſion, which is protracted to an indefinite length of time ‡.

* *De Var.* c. iv. † Mort. *Exerc.* 3. c. ix. p. 107. ‡ *Id. ib.*

183. To the malignant diſtinct ſmall-pox belong ſeveral ſpecies, which, although diſtinct, never arrive at ſuppuration. There are two varieties of theſe, namely, the *variolæ cryſtallinæ*, and the *variolæ verrucoſæ*. The ſpecies conſiſt-

ing of a thin, lymphatic, pellucid, acrid fluid, incapable of ſuppuration, or being even of a cauſtic and corroding kind, is generally called *cryſtalline* *. Hence it is named by ſome, alſo, *lymphatic*. I confeſs that it is not always diſtinct, but ſometimes breaks out and proceeds after the manner of the confluent ſmall-pox †. But it is then eaſily diſtinguiſhed from the diſtinct kind, of which we here treat, by the confluence and complication of the puſtules. They are likewiſe diſcriminated from the ſpurious ſmall-pox, between which and the cryſtalline kind there is ſome reſemblance ‡, —as will be ſhewn in its proper place,—by the continued fever, the danger of the ſymptoms, and their greater duration. Moreover, Meade refers to the cryſtalline ſmall-pox, as a particular variety of them, the *variolæ ſiliquoſæ* of Freind ‖, namely, thoſe ſmall-pox which are without any fluid, or *round*, *ſoft*, *hollow*, *empty* veſicles, proceeding from the fluid with which they were filled, either having been abſorbed, or, on their burſting, poured out, or in ſome meaſure exhauſted by the quantity of the ſaliva diſcharged §. The other variety, namely, that of the *verrucoſæ*, comprehends likewiſe diſtinct ſmall-pox, but ſuch as are hard, very like warts, raiſed above the ſkin, and conſiſting of a thick, tenacious, concrete mucus ¶. For none of the lymphatic fluid paſſes into them, or is any empty ſpace ſeen; but they are red and hard from the fourth to the

laſt day of the of the diſeaſe, conſtantly preſerving the ſame appearance and figure **. Theſe alſo are generally of the diſtinct and malignant kind ††, and incapable of ſuppuration, although I do not deny that they are ſometimes ranked among the benign or ſpurious ſmall-pox ‡‡; but then they are without the ſymptoms of malignity, namely, the fever and other dreadful ſymptoms, which accompany the malignant diſtinct kind. But when they are malignant they are by no means reſolved by ſuppuration, nor do they crack or fall off in cruſts, but a deſquamation takes place gradually ‖‖. Meade ſuppoſed this kind to be worſe than the *cryſtalline*, although that is denied by others, probably on account of their having ſeen them, as De Haën did, in the benign ſtate §§.

* De Haën, *Feb. Div.* c. 2. † Meade, *De Variol.* c. 2. ‡ De Haën, l. c. p. 99. ‖ *De quibuſd. Variol. gen. ad* Meade, Ep. 2. § Meade, l. c. ¶ Sagar, *De Variol. Iglaviens.* p. 29. ** Meade, l. c. p. 18. Sagar, l. c. p. 29. †† Freind, *De quibuſd. Var. gen. ad cl.* Meade, Ep. 2. ‡‡ Meade, *ibid.* An inſtance of malignant ſmall-pox is to be found in Freind, in the paſſage already quoted, where a faithful hiſtory of a fatal caſe of the diſeaſe is given. ‖‖ De Haën, l. c. p. 92. who is doubtful whether the *cryſtalline* ſmall-pox of Meade, together with the *ſiliquoſæ* and *verrucoſæ* of Freind, and other varieties, really belong to the anomalous and malignant ſmall-pox, becauſe he obſerved them terminate without inconvenience and danger. But I ſhould imagine that he then ſaw only a variety of the benign or ſpurious ſmall-pox. §§ *Id.* l. c.

THE BENIGN CONFLUENT SMALL-POX.

184. AFTER the diſtinct ſmall-pox follow the *confluent*; but an intermediate place is held by the *coherent* kind, as it is called (166.). In theſe the puſtules break out in the manner of the diſtinct ones, but differ from them in this, that they cover the ſkin ſo thickly as in moſt parts to touch each other, like cluſters of grapes. But we muſt pay particular attention to the puſtules which appear on the face, for the *diſtinctneſs*, *coherence*, or *confluence* of the ſmall-pox, is inferred from them principally, not from thoſe on the reſt of the body. Hence, if the puſtules on the face be diſtinct, although on other parts of the body they be coherent, or confluent, they nevertheleſs retain the nature of the *diſtinct* kind. On the other hand, if they cohere, or run together, on the face, although they appear diſtinct elſewhere, they are attended with the bad diſpoſition of the *coherent*, or *confluent* kind. Moreover, the *coherent* kind occaſions more fever, and is ſlower of ripening, than the benign diſtinct ſpecies; for they ſeldom ſuppurate and maturate on the eighth day. Hence, alſo, they are longer of forming into cruſts and falling off. In the *coherent* kind, likewiſe, the ptyaliſm ſeldom occurs, which is generally the inſeparable concomitant of the confluent ſmall-pox, and for the moſt part abſent from the diſtinct kind, at leaſt when benign. On the whole, the *coherent* ſmall-pox are conſidered as

being milder than the confluent* ; although even they may be malignant, according as the fever, on the eruption taking place, either ceaſes, or continues, and malignant ſymptoms are either abſent or preſent. But, becauſe they approach nearer to the confluent kind, than to the diſtinct, in number, form, and ſeverity ; I beg leave, with Ponticellius, to comprehend them both under one head †.

* De Haën, *Febr. Div.* p. 98. † L. c. c. iv.

185. As the confluent ſmall-pox, therefore, on the whole, are more ſevere and dangerous than the diſtinct, at leaſt the benign diſtinct, they are conſidered as being of ſo bad a diſpoſition, as to be commonly eſteemed malignant and anomalous. But they ſometimes run their courſe without much danger, and terminate favourably, inſomuch that, compared with the malignant diſtinct ſmall-pox, they may be called benign. On which account I conſider it as better to divide them into *benign*, or leſs dangerous ; and *malignant*, or more dangerous. But before entering on the treatment of each, the order requires my beginning with an explanation of the *benign* kind, gradually proceeding to the malignant; and I ſhall take the liberty of occaſionally interſperſing my account with remarks calculated to illuſtrate both.

186. The firſt ſtage of the confluent ſmall-pox is paſſed nearly in the ſame manner as that of the benign diſtinct (169.) kind, unleſs that

the fever and other ſymptoms, as anxiety, ſickneſs, an inclination to vomit, actual vomiting, thirſt, pain of the head, back, and loins, &c. are generally ſomewhat more ſevere; but there is leſs, or at leaſt more rarely, a diſpoſition to ſweating in adults *, and more frequently a diarrhœa in children †, not only preceding the eruption, but occaſionally prolonged one or two days beyond its commencement; which Sydenham never obſerved to occur in the diſtinct kind. But although the fever continues to diſtreſs the patient ſeverely, from its firſt attack to the commencement of the eruption, it is not very acute, nor is it attended with ſuch dejection, dyſpnœa, perturbation of mind, or ſmallneſs and weakneſs of the pulſe, as in the malignant diſtinct kind (178.). Nay, after the eruption it ſhortly abates ſomewhat, frequently intermitting, as in the benign diſtinct kind, eſpecially in the morning, until the ſuppuratory ſtage commences. Then indeed it ariſes again, but, after the pus being digeſted, it ſoon diſappears. On the other hand, in the malignant confluent ſmall-pox it is conſtant, and not a little aggravated, together with all the other ſymptoms, in the evening and at night ‡. This ſymptom requires particular attention, as by it, in particular, is pointed out the benignity or malignity of the ſmall-pox. Likewiſe, in the benign confluent ſmall-pox, during this ſtage, we never find petechiæ, livid ſpots,

and the miliary eruption, or tremors and ſubſultus tendinum, ſymptoms which generally precede the malignant ſmall-pox, whether diſtinct or confluent.

* Sydenh. l. c. † *Id. ib.* De Haën, *Febr. Div.* p. 95. 96. Schacht, *Inſt. Med. Pract.* c. xiii. § v. ‡ Sydenh. l. c.

187. In the beginning of the third day, nay even ſooner, the ſecond ſtage commences, and is prolonged beyond the time of that in the diſtinct ſmall-pox, particularly when benign. The ſooner the ſmall-pox break out, the more confluent and copious do they generally become *. Sometimes the eruption is deferred until the fifth, ſixth, or ſeventh day, and even later, but that is always an unfavourable ſymptom, and happens eſpecially in the malignant confluent ſmall-pox. For then the powers of the ſyſtem being either too languid, or overcome with the malignity of the diſeaſe, or exhauſted with ſome pain, not a vague and changeable one (which is attended with little danger), but fixed and laſting, in the loins reſembling a nephritic pain, in the ſide a pleuritic one, or in the joints or ſtomach, being accompanied with great ſickneſs, and vomiting, putting on the appearance of gout, cardialgia, or colic,—force out the puſtules with difficulty, and occaſion a lingering eruption. But many break out, at the very beginning, entangled with one another, or coherent, or running together. It ſometimes happens that at firſt they appear diſtinct, but

ſhortly after either cohere, or run together, and form larger veſicles. Generally they are very ſmall, and more minute and thick, than in the diſtinct ſpecies, ſo that at firſt it is not eaſy to diſtinguiſh them from meaſles, or eryſipelas. From both of them, however, they are diſtinguiſhed by the abſence of the other ſymptoms belonging to eryſipelas, or meaſles, by the conſideration of the prevailing epidemy, and ſhortly by the more manifeſt veſicular and variolous appearance of the puſtules. If, then, the face be covered with ſuch puſtules, very thickly ſpread, like ſmall grains of ſand, although on the reſt of the body they appear diſtinct, and are few in number, they do not depart from the nature and ſeverity of the confluent ſmall-pox, any more than if all the limbs were crowded with them. On the other hand, if they cover the trunk and limbs in great multitudes, while thoſe on the face are more ſparingly ſcattered, and larger, they approach more nearly to the benignity of the diſtinct kind, and indicate a milder ſtate of the diſeaſe. For the degree of the diſeaſe, and the benignity and malignity of the confluent ſmall-pox, are indicated moſt certainly, as I have already ſaid, by the number and quality of the pox with which the face is covered. After the eruption takes place, if the fever does not ceaſe, together with its ſymptoms,—as in the benign diſtinct kind,—in general, however, when the confluent ſmall-pox are truly benign, it remits very much;

but if they are malignant, this does not happen †.

* Sydenh. l. c. De Haën, l. c. p. 96. † Schacht, l. c. c. xxi. De Haën, l. c.

188. The confluent ſmall-pox, therefore, after their appearance, increaſe in ſize daily, but ſcarcely ever riſe to the ſame ſize which the diſtinct ſmall-pox, particularly thoſe on the face, attain. For, communicating with each other like red veſicles, they cover the whole face, and ſhortly after aſſume the appearance of a broad white pellicle, adhering as it were to the whole face, and riſing a little above the ſkin *. But the farther down they go below the face, the puſtules gradually become ſomewhat larger, being greateſt of all on the hands and feet, but always leſs than the diſtinct ones. They contain a more aqueous and limpid fluid, which by its acrimony occaſions very uneaſy itching. The whole face becomes ſooner ſwelled than in the benign diſtinct kind †. Infants and children are almoſt always affected with diarrhœa, and adults ‡ with ptyaliſm, which ariſes immediately on the eruption happening ‖, or, at leaſt, ſupervenes next day, or the day after, and is reckoned almoſt a conſtant ſymptom of confluent ſmall-pox; although, to tell the truth, it is ſometimes wanting in them, as it is almoſt always in the diſtinct kind §. The ptyaliſm conſiſts of a thin fluid, which is diſcharged copiouſly for ſeveral days, namely, until the ſuppuratory

ſtage at leaſt, wetting a great deal of linen, both during the day and at night. Such are the marks in common to the confluent ſmall-pox, whether benign or malignant. But the other ſymptoms, which in this ſtage are aſcribed to the confluent ſmall-pox, as phrenitis, coma, petechiæ, black puſtules, hemorrhages from the noſe, and an irregular flow of the menſes, urine diſcharged with blood, or ſtrangury ¶, and ſuch like ſymptoms, ſcarce ever happen in the benign confluent ſmall-pox, being almoſt peculiar to the malignant confluent ſpecies, as I ſhall afterwards ſhew.

* Sydenh. l. c. † *Id.* l. c. De Haën, l. c. p. 97. Schacht, l. c. ‡ Sagar (*Epid. Iglavien. an.* 1776, p. 17.) in children obſerved the ptyaliſm ſometimes ſupervening in this ſtage, but more frequently in the third. But the ſmall-pox were extremely malignant during the prevalence of that epidemy. The ſaliva, which was diſcharged, was very acrid and almoſt cauſtic, and, if it was not quickly ſpit out, it created the worſt complaints. For, if ſwallowed, it firſt cauſed pain and anxiety, and next convulſions, ſucceeded by death. ‖ Sydenh. l. c. § De Haën, l. c. p. 97. Schacht, l. c. ¶ *Id. ib.*

189. About the eighth day from the commencement of the eruption *, namely, on the ninth, tenth, or eleventh day of the diſeaſe from the beginning, ſometimes on the fourteenth, ſometimes on the fifteenth, according as the eruption appears ſooner or later, the third ſtage, or that of the ſuppuration, commences. But the more ſlowly this happens the worſe. Then, if the diſeaſe is benign, the puſtules ripen, and

the pus is digeſted; but they are not raiſed much, nor do they riſe to a point like the benign diſtinct kind. And the leſs confluent they are, and therefore the more benign, the ſooner do they arrive at maturity, and the more yellow do they grow. On the other hand, if the diſeaſe is malignant, they ſcarcely ever ſuppurate completely, and remain flat and depreſſed; and the more ſevere the complaint is, the darker colour do they aſſume; and, when left to themſelves, the ſlower are they of filling with pus. But the white pellicle, already mentioned, grows rougher to the touch, and gradually becomes, not yellow, as in the benign kind, but dark-coloured †, and tenſe. In the mean time the ſaliva growing more viſcid and thicker, as generally happens in the regular ſmall-pox, on the eleventh day is diſcharged with great difficulty, threatening the patient with ſuffocation. The patients, therefore, become anxious and thirſty, and are ſometimes ſeized with coughing when they drink, becauſe the drink paſſes into the larynx, and thus exciting a cough, is rejected through the noſtrils; the voice becomes hoarſe; drowſineſs and ſtupor come on; and the ptyaliſm being altogether ſuppreſſed, the ſwelling of the face ſubſides, and frequently on the ſame day, that is, on the eleventh, the ſkin becoming paler, and panting reſpiration ſupervening, attended with a placid abſence of mind, death very

ſpeedily, and as it were unexpectedly, puts a period to the patient's exiſtence. It is proper to obſerve, however, that the ptyaliſm, which, as I have ſaid, uſually ſtops about this time, frequently returns after one or two days, and is ſucceſsfully renewed. But when this does not happen, nothing, as I have obſerved, is more pernicious than its ceaſing, unleſs its place be ſupplied by the ſwelling of the face remaining, by which ſome portion of the variolous matter is retained, and prevented from being forced into the ſyſtem, or unleſs that which ought to have been excreted by the ptyaliſm be transferred to the hands and feet, occaſioning in them a ſalutary ſwelling, and averting the fatal conſequences that are threatened. For it is not neceſſary that the ſwelling of the face ſhould ſubſide all of a ſudden, but gradually, ſo that it ought to remain ſtill a few days, and be ſucceeded by that of the hands and feet, if we are to pronounce the patient's life in ſafety ‡. But if both the ptyaliſm intirely ſtops, and the ſwelling of the face ſubſides ſooner than proper, without that of either the hands or feet coming in place of them, the only hope that remains is by a copious diſcharge by the kidneys, or the bowels, in order that the noxious matter of the ſmall-pox may be carried off, as generally happens in the benign, confluent, and regular ſmall-pox. In the ſame manner, therefore, as a copious, eaſy, and long-kept-up ptyaliſm in a-

dults, is of great conſequence to produce a favourable termination, ſo in infants and children the diarrhœa contributes very much to that end; and though it does not attack them ſo ſoon as the ptyaliſm attacks adults, at whatever time it comes on, it continues with a ſalutary effect to the end of the diſeaſe, unleſs it is improperly ſtopped by art. It ought not to be checked, if it be not too profuſe, and do not waſte the ſtrength. For both evacuations, the ptyaliſm in adults, and the diarrhœa in infants and children, in this diſeaſe ſeem not leſs neceſſary than the preſence and maturation of the puſtules, and the ſwelling of the face, hands, or feet.

* De Haën, l. c. p. 97. † *Id. ib.* Syden. l. c. ‡ Syden. l. c.

190. When the maturation begins, the fever is more or leſs aggravated, as I have already ſhewn (189.), according as the puſtules are more crowded and copious, and more or leſs confluent, or the more benign their nature is. For, not only does the pulſe become quicker in conſequence of the ſuppuration, but the fever alſo is aggravated, nor does it diſappear on the ſuppuration being terminated. However, as this fever correſponds with the number of the puſtules*, which in the confluent ſmall-pox is very great, it ſeems in a great meaſure to ariſe from their ſuppuration, or at leaſt from the quantity of the pus and ichor, with which they abound, being

again received into the blood. Some likewiſe add retention of the cuticular diſcharge, and not without a ſhew of probability, ſince the whole ſkin is ſo beſet with puſtules, that ſcarcely any perſpiration can take place by the pores. It is alſo probable, as the fever is ſometimes aggravated and prolonged without much ſuppuration, that it derives its origin from the variolous matter being left in the blood, becauſe perhaps it could not be intirely received by the ſkin, or becauſe the vital powers were not adequate to its total expulſion. The ſubſequent eruption of puſtules, which often happens, ſeems to ſhew that this is the caſe. This fever obtains the name of *ſecondary*, and at one time ſhews an inflammatory diſpoſition, at another a putrid, according to the difference of the blood, temperament, age, habit, ſeaſon of year, and the prevailing epidemy. It increaſes, more or leſs, according to the greater or leſſer number and violence of the cauſes. It is prolonged alſo to the beginning of the fourth ſtage, when the whole ſkin is covered with a thick cruſt, and more or leſs brown, under which there is a fluctuation of pus. That pus being abſorbed, not only ſeems to cheriſh the fever, as I have already ſtated, but alſo paſſes by metaſtaſis into the moſt important internal parts, where it adheres, and occaſions the moſt dangerous diſeaſes. But that which ſettles on the ſurface erodes the parts lying under the ſkin, particularly the adipoſe

membrane, almoſt all the fat of which becomes putrid ‡; often all the way to the bones, ſometimes giving riſe to caries and ſpina ventoſa. In the mean time the puſtules on the limbs burſt, without any exſiccation taking place; nay, the back and other parts being deprived of the cuticle, the raw ſkin is expoſed.

* Sydenh. l. c. † I have already obſerved (189.) that the confluent ſmall-pox are the more dangerous, the later and more difficultly they arrive at ſuppuration. With a view to this principally, Sydenham eſtabliſhed three ſpecies of confluent ſmall-pox, namely, the *mildeſt*, in which the *ſecondary* fever happens on the eleventh day from the firſt attack of the diſeaſe, partly from incipient ſuppuration, partly from abſorption of pus; the *mediocres*, in which on the fourteenth the ſuppuration only begins; and the *crudiſſimæ*, which do not ſuppurate before the ſeventeenth day. *Diſſert. Epiſt.* p. 405. ‡ That the fat in this ſpecies of the diſeaſe putrefies, and is converted into pus, is ſo evident, that Haller ſaw variolous matter blaze on being applied to a candle. *Hiſt. Var. an.* 1735.

191. At lenth the cuticle, both on the face and elſewhere, falls off in broader ſcales; and this happens on the ſeventeenth or twentieth day, or ſometimes even later *. After the ſcales fall off, the ſkin underneath remains red, but in a ſhort time is covered with a whitiſh pellicle, which falling off, in like manner, no perceptible roughneſs is left on the face, but it is ſoon ſucceeded by mealy ſcales of a very corroſive nature, which, according to their greater or leſſer

corroſive power, not only leave pits more or leſs deep, but alſo disfigure the face with fouler cicatrices than are left by the diſtinct pox, eſpecially when benign †. Likewiſe the pus, which is abſorbed, paſſes off ſometimes by the kidneys, ſometimes by the bowels, at times ſome part of it is collected here and there in the cellular membrane, and gives riſe to abſceſſes, or red painful tumours quickly terminating in abſceſs, which, when opened at the proper time, pour out true pus, or copious, and ſometimes acrid and corroſive ſanies. And this generally happens towards the end of the deſquamation; the fever in the mean time not being thoroughly diſcuſſed, but rendered milder, and, like a remittent, ſtill having acceſſions, until it gradually diſappears. Sometimes after the pox have dried and fallen off, they are ſucceeded by ſmaller diſtinct ones, which carry the remains of the morbid matter to the ſurface; and theſe are called *ſecondary* ſmall-pox, or *repullulantes*. But many of the ſymptoms already mentioned are in common to the preſent ſpecies of ſmall-pox and the diſtinct one, eſpecially when of a bad diſpoſition ‡.

* De Haën, l. c. p. 97. † Sydenh. l. c. ‡ Schacht, l. c. § xxxiv.

THE MALIGNANT CONFLUENT SMALL-POX.

192. SUCH is the deſcription of the confluent ſmall-pox named *benign*, or *leſs dangerous*. It was impoſſible to avoid occaſionally mentioning

the malignant kind, in order that, by comparing together the ſymptoms of each, the diſtinction between them might appear the more clearly. For, in every kind of confluent ſmall-pox, there are certain ſeeds, as it were, of malignity; and the extremes of the benign and malignant ſmall-pox ſo nearly border on each other, that it is a very difficult matter to draw the proper line of diſtinction between them, in any other way than by comparing the leſs pernicious, or benign, with the more pernicious, or malignant kind, as I have already done. But to render the diſtinction between them ſtill more evident, I ſhall now proceed to give a particular account of the malignant confluent ſmall-pox, employing the term *malignity* in the ſenſe already laid down (6.), in which I have begged leave to uſe it in future. But as moſt of the ſymptoms belonging to the malignant ſmall-pox have already been mentioned in ſeveral places, but particularly when treating of the malignant diſtinct kind (178. et ſeq.), and as many obſervations in point have at different times been thrown in when I deſcribed the benign confluent ſmall-pox (184. et ſeq.), which contribute very much to the diſtinguiſhing of the malignant confluent kind, they may be now called to mind, to preclude the irkſome neceſſity of recapitulating them here. On which account I ſhall omit mentioning in what manner the malignant confluent

kind commence, break out, proceed, ſuppurate, and dry, having already in the deſcription of the benign confluent ſmall-pox ſpoken at ſufficient length of the ſymptoms in common to each. It will, therefore, be more eligible to give a brief deſcription of particular ſpecies or varieties of the malignant confluent ſmall-pox, as obſerved by the moſt experienced phyſicians, by which I hope the nature of the malignant ſmall-pox may appear perfectly manifeſt from the marks peculiar to it.

193. But I ſhall commence with the worſt and moſt deſtructive ſpecies of confluent ſmall-pox, which has been admirably deſcribed by that very accurate writer Morton *. In the firſt ſtage it ſcarcely appears from the pulſe that the patient is at all feveriſh, while in the meantime the greateſt languor is preſent; the ſtrokes of the arteries, however quick, are weak and ſmall; the urine is thin, clear, and watery; fainting fits often recur reſembling languor, and hyſterical ſuffocation; there is preſent a moſt ſevere, acute, and evidently ſpaſmodic pain of the head and loins; the thirſt and heat are moderate; there is ſcarce any unuſual nauſea, vomiting, and ſickneſs; to which ſymptoms if we add the others peculiar to the malignant ſmall-pox, as a debilitating diarrhœa, obſtinate watching, ſubſultus tendinum, or other ſpaſmodic affections, profound coma, petechiæ, purple or black ſpots on the ſurface of the ſkin, or a pellucid, and as it were cryſtalline, miliary erup-

tion on the neck and breaſt, and likewiſe copious hemorrhages exhauſting the ſtrength more and more, the fallacious appearance of a milder diſeaſe in other reſpects will no longer deceive the phyſician.

* *Exerc.* 3. c. vii. p. 59.

194. The ſecond ſtage commences with the eruption of the ſmall-pox, which is commonly premature, as I have already ſaid generally happens in the confluent kind (187.), or it is ſlower than in the diſtinct or benign confluent kind. But as the eruption of the puſtules, which are certainly leſs conſpicuous, is going on, the whole ſkin, almoſt in a moment, is covered with an eryſipelatous redneſs, deep ſeated, and becomes ſwelled. Which redneſs, during the whole three days of the eruption going forward, continues conſtant, uniform, and unchanged, excepting on the face and lips, in which that ſwelling, during the whole courſe of the ſtage, increaſes and becomes more and more manifeſt, until the firſt day of the maturation. Immediately on the commencement of the eruption, nature, already in a ſtate of languor, almoſt ſinks under it, the ſtrength intirely failing; the fever does not at all abate, but continues as before, or, as more frequently happens, is even aggravated with delirium, watching, hemorrhages, and other alarming ſymptoms, all of which increaſe to the laſt day, which, in this deadly ſpecies of the complaint, does not exceed

the concluſion of this ſtage, or, at fartheſt, the beginning of the following, or the firſt or ſecond day of the ſuppuration. In that caſe, before the approach of death, the whole ſkin, but particularly that of the face, becoming of a leadiſh white colour, appears like parchment. Moreover, this very fatal ſpecies of ſmall-pox, in which ſcarcely any one ſurvives the time already mentioned *, is of very rare occurrence, and may be named with propriety *eryſipelatous*.

* Morton, l. c. p. 79.

195. What happens to the whole ſkin in the ſpecies juſt deſcribed (193. 194.), in the other, which I am about to deſcribe, occurs in the face only. For in it the ſkin of the face only becomes thick and raiſed, with a ſmooth, plain, eryſipelatous ſwelling, while on the limbs and trunk the eruption of ſmall-pox is almoſt diſtinct, but in colour, ſize, and figure, differs not a little from the regular and benign ſmall-pox. For the puſtules have a colour like that of meaſles, but leſs vivid; their ſhape is irregular, and they are much ſmaller. Hence, on the firſt day of the eruption, theſe ſmall-pox cannot be diſtinguiſhed from meaſles, unleſs by a certain degree of hardneſs and reſiſtance. On the ſecond and third day they ſtill remain depreſſed and low, and ſcarcely, if at all, riſe to a point. In the mean time, they become of a livid colour, as if a ſtag-

nation of blood took place in them. Laſtly, on the firſt day of the ſuppuration, the ſkin of the face, as in the former caſe, becomes white, like parchment, being ſhortly ſucceeded by death, in the ſame manner as if the ſmall-pox had run together all over the body *. This ſpecies might be called *morbillous*; and is equally malignant as the former, and more frequent. Of this kind nearly were the *anomalous confluent* ſmall-pox of the year 1670, 1671, and 1672, obſerved by Sydenham to rage in London †. But as there is ſome diſtinction between them and thoſe of Morton, I ſhall therefore ſubjoin an account of them alſo. They firſt broke out on the ſecond or third day, having "the appearance of a reddiſh uniform tumour; covering the intire face, thicker than eryſipelas, with ſcarcely any viſible diſtinction between the puſtules." Upon the reſt of the body were ſcattered here and there broader ſpaces, covered with innumerable acrid puſtules, running together, among which, particularly on the thighs, appeared pretty conſpicuous veſicles, very like thoſe cauſed by fire, full of limpid ſerum. Theſe occaſionally burſting and pouring out a great quantity of ſerum, the ſkin underneath appeared black, and, as it were, ſphacelated. When this dreadful appearance took place, —for it was of rare occurrence, and happened only when the epidemy raged with uncommon violence,—the patients ſhortly after expired. But

upon the eleventh day the reddiſh ſwelling of the face was ſucceeded here and there by a ſhining white pellicle, which in a ſhort time overſpread the whole. From this white pellicle ſhortly after proceeded a ſhining matter terminating in cruſts, of a deep red colour like that of coagulated blood, which, as the puſtule ripened, became daily blacker, until at length the whole face appeared quite black, as if it had been covered with ſoot. During this peſtilential ſtate, thoſe who were affected with great ſeverity expired, as I have already ſaid, within a few days from the eruption. In others, not the eleventh day, which is commonly the laſt in malignant confluent ſmall-pox, but the fourteenth, ſometimes even the ſeventeenth day, proved fatal; unleſs the patient's death had been accelerated by an improper regimen. But if they ſurvived this day they recovered. The fever, and all the ſymptoms which preceded or attended this peſtilential complaint, were unuſually ſevere, and accompanied with a more igneous and cauſtic inflammation. There was likewiſe an unuſual propenſity to ptyaliſm. The puſtules were leſs, but ſo hot and inflamed, that on their firſt appearance it was difficult to diſtinguiſh them from *eryſipelas*, or even from meaſles. The cruſts at length falling off, they were ſucceeded by mealy ſcales, continuing longer, and leaving more diſagreeable marks in the ſkin. At the ſame time a dyſentery prevailed

epidemically throughout the city. The ſmall-pox, eſpecially thoſe excited by too warm a regimen, were ſometimes accompanied with it, which required particular attention, that it may not be ſuppoſed to have been a ſymptom peculiar to the ſmall-pox.

* Mort. l. c. p. 80. † *Oper.* ſect. 3. c. vi. p. 229.

196. The ſpecies of confluent ſmall-pox, which follows next, is likewiſe malignant, but leſs deadly. In it the pox break out in great numbers, very ſmall and diſtinct, as it were, yet everywhere adhering, and diſpoſed without order, not even excepting thoſe on the face. During the whole ſtage of the eruption they never become pointed, but only make the ſkin rough, like the pricks of nettles. In the beginning of the third ſtage they alſo become white, and run together ſo as to put on the appearance of a white membrane, eſpecially on the face. Although leſs dangerous than the two former kinds, on account of their more readily ſuppurating and drying, ſtill they require the ptyaliſm being kept up, a copious diſcharge of urine, and long-continued ſwelling of the extremities, to cauſe a favourable termination. But if the ptyaliſm, which uſually commences with the eruption, be too ſoon ſtopped, or if, on its being ſuppreſſed during the ſuppuration, its place is not ſupplied with a copious diſcharge by the kidneys or bowels, or by a copious and univerſal ſweat, or a permanent

ſwelling of the extremities is not ſubſtituted in place of theſe evacuations, the patient's life is hardly ever protracted to the fourteenth or fifteenth day of the diſeaſe. *(Id. ib.)*

197. In the fourth place, I ſhall make mention of a ſpecies of the confluent and malignant ſmall-pox, named *ſanguineous*. For the veſicles are full of blood, as it were, being at one time livid, at another having black ſpots, or purple ones interſperſed in the empty ſpaces. But they appear either ſo from the very beginning, namely, like ſmall tubercles full of black blood, exactly reſembling the marks left in the ſkin by pinching, or they become ſo in the courſe of the diſeaſe, when the ſmall-pox being collected in great abundance do not ſuppurate on the third or fourth day of the eruption, as they ought to have done, but become livid or bloody, while black ſpots, vibices, or petechiæ, ariſe over the whole body, which ſeem to be nothing elſe than ſmall gangrenes, indicating the approach of death in one or two days. In that caſe the blood very frequently becomes ſo thin and putrid, as to guſh from the mouth, noſe, eyes, or any other paſſage of the body, eſpecially the kidneys, bladder, and uterus. And that happens not only in the ſuppuratory ſtage, as I have already ſaid, but likewiſe ſometimes in the two former ones *. De Haën once ſaw the *ſanguineous* ſmall-pox in a ſhort time become livid, attended with a very copious diſcharge of blood along with

the urine, and prove fatal on the fifth day of the diſeaſe. They may be named with propriety,—eſpecially when they are livid and reſemble black phlyctænæ,—*gangrenous* and *putrid*.

* Mead. *De Var.* p. 18. & Syd. *Diſ. Ep.* † *Feb. Divis.* p. 100.

198. The ſpecies of confluent ſmall-pox generally accompanied with petechiæ, ſometimes with the miliary eruption, nay, occaſionally combined with both, obſerved by Haller in the year 1735, was certainly putrid and malignant. "For ſeveral years (as he obſerves) the ſmall-pox had lain dormant, attacking only a few people here and there, and in a mild way. The whole former part of the year 1735 was damp, rainy, and the north wind prevailed ſo much, that during the whole ſummer thunder was heard only once or twice, which is certainly a thing of very rare occurrence, and inundations were very common. In the month of March the ſmall-pox broke out, and, as generally happens in our country, were of the benign kind. The number of patients gradually increaſed, and in the month of May, June, and Auguſt, was uncommonly great, very few eſcaping the complaint who had not already had it. In September the diſeaſe began to grow languid, and gradually gave place to the miliary fever. In the ſummer months the confluent ſmall-pox frequently occurred; and not unfrequently, on their breaking out, black ſpots ſupervened, and in adults the miliary eruption.

There were conſequently many deaths, and few of thoſe who were ſeverely affected eſcaped, and even then after a lingering illneſs. The patients were affected with greater ſeverity, and for a greater length of time, being at the ſame time attacked with black ſpots, if they had aggravated the complaint by heating medicines and diet. The black ſpots broke out along with the confluent ſmall-pox upon the fourth or fifth day of the complaint, and on the ſecond or third of the eruption, in great numbers; they were plain, two lines broad, of a bluiſh black colour, frequently blacker than ink. They were preceded by ſharp pains of the back, pleuritic ſtitches, and ſpitting of blood; and were ſucceeded by delirium, moſt ſevere cough, and on the eighth and ninth day by a fatal collapſe of the puſtules. A high degree of alkaleſcence in the fluids was preſent, in conſequence of which a horrid ſmell, both of the puſtules and breath, was occaſioned. In what manner this celebrated phyſician reſcued his patients from ſo terrible a complaint, we ſhall afterwards mention when we come to the cure.

199. The *variolæ cryſtallinæ*, or *lymphaticæ*, or thoſe called *ſiliquoſæ*, already mentioned (183.), ſometimes take place in the confluent ſpecies. Sagar, in the fatal variolous epidemy, of which he has left us a deſcription, mentions, "that ſeveral of the lymphatic puſtules ſometimes run together, forming bliſters as big as nutmegs." Others call

them *ſiliquoſæ*, but he has given them the name of *bullatæ*. He ſeldom ſaw them filled with pellucid watery with lymph, but generally that which was ſemi-opaque, or whitiſh, or of an opaque carnation, or dark-brown colour; or, as often happened, he found them flaccid and empty. Moreover, he affirms, that he never ſaw theſe *variolæ bullatæ* by themſelves in any patient, but interſperſed among the *verrucoſæ*, *herpetoſæ*, and purulent ones, ſeparately, or altogether *. He grants, however, that all the ſtages in them were unuſually long, eſpecially the ſuppuratory one, though in fact that ſtage could ſcarcely be ſaid to take place at all, as they do not terminate in ſuppuration. For the bliſters being either eaten through by the lymph contained in them, or burſting, put a period to the diſeaſe †. It is ſurpriſing, that ſeveral labouring under the lymphatic ſmall-pox, attended with ſuppuration, who remained inactive and regardleſs of themſelves, without either fever, ſwelling of the face, or any ptyaliſm, were ſometimes obſerved to die all of a ſudden from ſome ſecret cauſe ‡. It probably proceeded from a metaſtaſis of the variolous matter.

* *Diſ. De Var. Igl.* p. 10. † *Id. ib.* p. 18. ‡ *Id. ib.* p. 21.

200. All the ſpecies of the complaint already mentioned (193. to 199.), even after the eruption of the ſmall-pox, were attended with a conſtant fever, a weak and quick, or rapid pulſe, dry

tongue, heat, though not to the touch, delirium, coma, watching, ſubſultus tendinum, and other pernicious ſymptoms of that kind, throughout the whole ſecond ſtage; for, as I have already remarked (194.), on the eruption happening, it does not ceaſe or remit in the benign or intermediate ſmall-pox (182.). In theſe, as well in the other ſpecies of the confluent ſmall-pox, nature endeavours to free herſelf from the variolous poiſon, and the fluids, which it has aſſimilated to itſelf, by the ptyaliſm, or diarrhœa, or by the ſweating, or diſcharge of urine: but ſhe does not always attain her end; for frequently all her endeavours terminate in an unavailing and frequent deſire to make water, which is at length ſucceeded by a fatal iſchuria.

201. But when they come on like the benign ſmall-pox (186. 187.), which ſometimes happens, putting on a fallacious appearance, their ſecret malignity is manifeſted by the immoderate diarrhœa, by the colliquative ſweating, delirium, want of ſleep, and other malignant ſymptoms; or by petechiæ and miliary veſicles occupying the interſtices of the ſmall-pox, which, as I have already ſaid (180.), break out, at leaſt on the ſecond day of the eruption, on the neck, breaſt, and arms. Beſides, as it has been already ſhewn (182.), that there is ſometimes an intermediate ſpecies of diſtinct ſmall-pox between the benign and malignant, the confluent kind in like manner ſometimes hold

an intermediate rank between the benign and malignant. In this ſpecies the eruption is not ſo rapid, and nature, for two or three days from its commencement, ſeems to hold a doubtful conteſt. In the mean time the fever remains ſtationary, as it were, accompanied with watching, delirium, and other ſymptoms, with which the firſt ſtage was attended. After this, however, nature prevailing, the fever intermits, or at leaſt experiences a manifeſt remiſſion, with all its ſymptoms; the pulſe, heat, and appetite, return to their natural condition. But all the variolous matter not having been ſecreted and expelled, partly on this account, and partly on account of the incipient ſuppuration, the fever is aggravated in the third ſtage, appearing again like an acute continued fever, which, however, in the laſt ſtage, is changed into a remittent one of a milder kind. But becauſe in the ſecond ſtage the whole variolous matter is not forced to the ſkin, and therefore the fever does not intirely ceaſe, freſh eruptions appear daily in various parts of the body. For all the puſtules do not break out together in this ſpecies; but on the firſt day they overſpread the face and hands, and on the ſecond the arms and trunk, and, laſtly, the legs and feet. Nay, ſometimes paſſing the trunk of the body, the face and limbs alone are covered with very thick puſtules, which almoſt adhere to one another. Sometimes,

among the puſtules that firſt broke out, other freſh ones ariſe, ſo that ſuch as appeared diſtinct on the firſt day become confluent or coherent on the third, of irregular ſize and ſhape, neither altogether round, nor of a vivid colour, like the regular ones. On the following days their baſes are more ſlowly enlarged, and become peaked, being in ſome meaſure depreſſed, and oppoſing leſs reſiſtance to the touch. But on the third day of the eruption, before the fever returns, the ptyaliſm ſupervenes, though without any eruption, eſpecially if it be ſummer, on the fauces and tonſils, or mouth, exciting a flow of ſaliva. On the other hand, if it be winter, when the ſkin is conſtricted with cold, puſtules break out in theſe parts alſo, exciting frequent ſpitting and cough*.

* Morton, l. c. p. 82.

202. Sometimes theſe intermediate ſmall-pox (201.), as they are called, on the poiſon being expelled by the eruption, or at leaſt being much diminiſhed, the blood being thus purged of it, are changed into completely benign ones. Then, although the eruption has been difficult, they acquire a figure completely round, and are ſurrounded with a red margin; and although, on the firſt day of the ſuppuration, ſeveral of them here and there ſhew little pits in the middle, yet, on the third or fourth day, they riſe, become turgid and peaked. Laſtly, on the fifth day, being now filled with pus, they begin to grow yellow, and

dry. And thus the patient, without any ptyaliſm, ſecondary fever, or ſwelling of the extremities, though at other times very neceſſary, has a ſucceſsful recovery *. But if an imperfect expulſion of the variolous matter takes place, nature endeavours to throw off the remainder by the ſalivary glands. But the puſtules are then ſlower of attaining maturity: in conſequence of which the ſtage of maturation is of very uncertain duration, being ſometimes extended to four, ſix, eight, or twelve days, ſometimes even beyond that period. In which caſe the puſtules appear uniformly depreſſed in the middle, nor are their margins red, although they are afterwards gradually raiſed and turgid. They nevertheleſs remain whitiſh and pellucid, as it were, becauſe they are not filled with pus, but limpid water, or air. Laſtly, on attaining the proper ſize, ſome pus is formed in them, making them appear of a yellow colour; they are too flaccid, however, and moſt of them, particulary on the joints, are confluent. But as they very ſlowly undergo ſuppuration, ſo they are very late of drying, and frequently leave foul cicatrices upon the ſkin †. Such is the efficacy of the ptyaliſm, that frequently by means of it the whole variolous matter is carried off, while the patient remains free, both from the fever and every other bad ſymptom.

* *Id. ib.* p. 104 † *Id. ib.*

203. I have already, in a great meaſure, enumerated the ſymptoms that occur in the third ſtage of the malignant confluent ſmall-pox. I conſidered it as particularly deſerving of notice, that the ſpecies of the ſmall-pox, which in the ſecond ſtage is attended with more malignant ſymptoms (194.), and, on account of the univerſal redneſs of the ſkin, may be called *eryſipelatous*, generally occaſions death on the firſt or ſecond day of the ſuppuration *; and that the redneſs at that time is converted into a very diſagreeable whitiſh colour, almoſt univerſally diffuſed over the body. I ſhall now ſubjoin ſome remarks upon the ſpecies, which, on account of its great reſemblance at firſt to meaſles, I have ſaid may be named *morbillous* (195.). Although the puſtules upon the breaſt and other parts of the body appear like diſtinct ones, and are white in the middle, yet in the third ſtage they are not ſurrounded with a red circle, like the true diſtinct ones, nor are they raiſed, but very ſlightly; and ſo far are the intermediate ſpaces from being red, that they are livid, or pale. The puſtules, therefore, remain flat and depreſſed. But the cuticle, which formerly ſeemed to ſeparate on heir tops, becomes again glued to the ſkin, like dry ſcales. It is in common, however, to all the ſpecies of the malignant confluent ſmall-pox, that the ptyaliſm which accompanied them in the ſecond ſtage, in the third is very ſlight, and ſoon

ceaſes, without ſwelling of the head, fauces, or extremities. There next ſupervenes a troubleſome, frequent, and generally fruitleſs deſire to make water. When this happens, the patient ſeldom ſurvives the ſecond or third day of this ſtage †.

* *Id. ib.* p. 102. † This deſire to make water is conſidered generally as a fatal ſymptom. But Ludwig (*Inſt. Med. Clin.* § 198.) obſerves, that it ought not always to occaſion apprehenſion, "provided the other ſymptoms are favourable, eſpecially if the urine be not altogether watery, but ſomewhat tinged, and draw off part of the morbific matter." But the deſire to make water in that caſe does not prove unavailing; and it was of this kind I ſpoke in the text.

204. If the patient, however, is ſo fortunate as to ſupport the diſeaſe,—which indeed very ſeldom happens,—the puſtules never arriving at maturation until the commencement of the fourth or laſt ſtage, which is then finiſhed in ten or twelve days; he is conſtantly troubled with fever, and continues to be haraſſed with watching, delirium, fainting, and other bad ſymptoms with which he was already affected, until the fever, by the aid of art and nature together, is removed, which happens probably on the ſeventeenth or twentieth day, and the health is at length reſtored. But if the hemorrhages, which generally happen before, ſtill continue, the patient's death muſt unavoidably take place very ſoon. Others linger in a ſtate of hectic fever, or ſlow conſumption, for thirty days, but at length are carried off

in conſequence of ſphacelus of ſome internal part ſuddenly coming on *. I paſs over the other ſymptoms which belong to the third and fourth ſtage in every ſpecies, as being already either ſufficiently pointed out in the account of each of them, or not differing from ſuch as were detailed in the hiſtory of the benign confluent ſmall-pox (189. to 191.). I ſhall only obſerve, that in ſome epidemies, not only does one kind of ſmall-pox appear before another, but that ſometimes all the ſpecies appear ſeparately; nay, are ſo blended together, that both coherent and confluent ſmall-pox, the ſpecies called cryſtallinæ and ſiliquoſæ, and the morbillous, eryſipelatous, and ſanguineous ſpecies, &c. ſometimes are obſerved in the patient at the ſame time, which Sagar affirms to have obſerved to happen in the epidemy of 1776.

* Morton, l. c. p. 103.

SOME SYMPTOMS DESERVING MORE PARTICULAR NOTICE, IN COMMON TO THE DISTINCT AND CONFLUENT SMALL-POX.

205. AMONG the chief and more ſevere ſymptoms which ſupervene in ſmall-pox, is ranked *phrenitis*, the preſence of which is judged of by the patient's ſtarting up with great violence, incapable of bearing the heat of the bed, raging with ſuch fury, that he can ſcarcely be reſtrained by force. This has been obſerved to happen in every ſtage of ſmall-pox. According to the time of its happening it is aſcribed to various cauſes.

In the firſt ſtage, or during the eruption, it is generally occaſioned by plethora, exceſſive heat of the blood, by its motion being quickened by the fever, by the inflammatory diatheſis, and by the variolous acrimony irritating the brain. In the ſuppuratory ſtage it is cauſed by exceſſive inflammation of the puſtules,—eſpecially when they are numerous,—by very uneaſy pain, derangement of the nerves, watching; by the ſtriking in and metaſtaſis of the virus. From ſimilar cauſes ſometimes ariſes *coma ſomnolentum*, or *lethargy*, that profound ſleep from which the patients are rouſed with difficulty, and into which they ſhortly relapſe. I have already frequently remarked, that red, purple, or livid ſpots, or petechiæ, ſpring up among the ſmall-pox, which ſeem to be ſometimes primary, and therefore combined with ſmall-pox; at other times ſecondary, and the effects or ſymptoms of the complaint. The firſt happens principally when the petechiæ prevail epidemically, or are ſtationary; for then, whatever diſeaſes happen during their prevalence, or ſubſequently, and likewiſe ſmall-pox,—if they come on at the ſame time,—are combined with the petechial diſeaſe, and partake in ſome meaſure of its nature. The ſecond, however, takes place when the ſmall-pox are conjoined with that dyſcraſy of the blood, which is prone to occaſion echymoſes, vibices, weals, and petechiæ, or when they are treated improperly

with the warm regimen and alexipharmacs, by which the blood is overheated, and forced with violence into the capillary veſſels. What we mention of the petechiæ may be underſtood alſo of the miliary eruption, and other ſimilar exanthemata, which in like manner may be combined with ſmall-pox, or ſupervene upon them as ſymptoms. It is proper, however, to obſerve alſo, that ſometimes ſmall black ſpots, not larger than pin-heads, appear on the tops of the pox, which are often flat in the middle. Theſe ariſe either from the gangrenous nature of the variolous matter, or from the bad condition of the blood, or from employing an improper regimen, and muſt be conſidered in fact as ſmall gangrenes. When they proceed from the latter cauſe, by changing the regimen into a more proper and and cooling one, their black colour is gradually changed into a brown, and, laſtly, into a yellow, which is the mark of a proper and mild maturation having taken place.

206. Nor is it uncommon for a difficult and imperfect eruption of the ſmall-pox to take place, or for thoſe which have already appeared to become depreſſed and flaccid, or to ſtrike in, as it is called. This evil is occaſioned either by languid vital power, or by the imprudent expoſure of the body to cold, or by ill-judged bleeding, purging, or any other exceſſive evacuation; or by the patient's continuing too long in the erect

poſture, or out of bed; or by fainting, ſudden terror, bad news, and ſimilar cauſes, which are apt to weaken the ſtrength, or conſtrict the veſſels of the ſkin, and force the fluids to the internal parts of the ſyſtem. From whatever cauſe this proceeds, it gives riſe to dangerous, or even to fatal ſymptoms, proceeding from the variolous matter being retained in the internal parts of the ſyſtem, or forced thither. From this metaſtaſis * often proceeds a diarrhœa in adults, which not unfrequently proves fatal. It cannot be denied, however, that ſometimes the eruption of ſmall-pox is retarded by too violent motion of the blood, and exceſſive fulneſs of the veſſels, in ſome meaſure interrupting its circulation; and that the matter prepared in the puſtules by the heat of the air, bed-chamber, bed, or regimen employed, is ſo attenuated and diſſolved, as to be very eaſily abſorbed, and forced to the internal parts, leaving the puſtules flaccid and empty.

* The pus, when abſorbed and carried to the brain, occaſions phrenitis, convulſions, and coma; when carried to the lungs, ſuffocation, with a weak or intermitting pulſe, eſpecially during inſpiration; in the eyes it gives riſe to loſs of ſight, and diſorganization of their texture. Sagar, *De Var. Iglav.* p. 20.

207. A painful ſuppreſſion, or retention of the urine, alſo is a frequent ſymptom in ſmall-pox of every kind. For it is depreſſed either on account of a defective ſecretion taking place in the kidneys, or, when already ſecreted, it is retained on

account of the bladder not excreting it, whether that proceeds from reſolution of the bladder, or from ſpaſm of the ſphincter, or from ſwelling of it, or from inflammation of its neck, or that of the urethra and neighbouring parts, or from the paſſage being obſtructed by mucous and purulent urine. Young people, in particular, are liable to this inconvenience. Hæmaturia, alſo, or a diſcharge of blood from the bladder, which is generally attended with imminent danger, occaſionally happens at any period of the diſeaſe. Young people, or ſuch as are in their prime, and have been accuſtomed to indulge in wine and fermented liquors, are principally liable to this dangerous accident. They alſo, tho gh rarely, expectorate or cough up blood. In others, however, hemorrhages from the uterus, noſe, inteſtines, and other parts, ſupervene, all which evacuations, when they proceed from exceſſive tenuity and diſſolution of the blood,—as is generally the caſe,—are always the precurſors of the patient's death. It is proper, however, not to conſider,—as is commonly done,—the flow of the catamenia, occurring both in the firſt and ſubſequent ſtages of the diſeaſe, or in patients who have ceaſed to menſtruate, as a dangerous ſymptom: for this evacuation, provided it be not exceſſive, has often been obſerved to take place without injury.

208. The eyes ſometimes are in no ſmall meaſure affected by the ſmall-pox. Sometimes the

variolous matter infects the lachrymal lymph, causing pain, redness, heat, and watering in them: at other times the eye-lids are so much swelled as to intirely close up the eyes. But these appear slight inconveniences. It is a great deal more dangerous if the pustules appear on the bulb of the eye itself; for then they occasion ophthalmia, pain, abscess, hypopyum, stophyloma, leucoma, and cicatrices, which frequently prove indelible, nay, they frequently destroy the whole bulb, in such a manner as to deprive the patients of their eyes. Nor do the ears escape free. If the variolous matter attacks the inside of them, otalgia, inflammation, apostema, open ulcers, deafness, and other very obstinate affections of these parts, are occasioned. But among the symptoms in common to every kind of small-pox, we must not omit the vomiting, of which mention has several times been made in the description of the disease. It is generally occasioned by the febrile commotion in tender and delicate habits, or by the variolous poison irritating the nerves of the par vagum and membranes of the stomach in the first stage of the complaint. When it proceeds from this cause, as soon as the whole virus has broken out in the form of pustules, it usually ceases intirely. It is sometimes cherished by sordes in the stomach, or by a collection of bile, by vitiation of the ingesta, or by worms. In that case it is preceded by dyspep-

tic ſymptoms, ſuch as a bad taſte in the mouth, foulneſs of the tongue, loathing of food; bile, or other corrupted fluids, and worms, are either actually expelled, or their preſence is evinced by the ſymptoms peculiar to them, as itching of the noſe, ſneezing, fluſhings of the face, ſtarting during ſleep, gnaſhing of the teeth, pains of the belly, and the like. Not unfrequently to theſe ſymptoms is ſuperadded, a fetid diarrhœa, of a cineritious, green, yellow, variegated colour. When the vomiting ſeems to ariſe from this, it appears that the ſmall-pox are combined with dyſpepſy, proceeding from a gaſtric colluvies and worms, and that many anomalous and unuſual ſymptoms are attached to the complaint, which ought by no means to be aſcribed to the variolous virus.

209. Intermitting fevers, likewiſe, are ſometimes combined with ſmall-pox, requiring a particular treatment, as Meade has very properly obſerved *. Sometimes, alſo, a cough is added, generally as an acceſſory ſymptom. For it is by no means peculiar to them, but comes on either at the beginning, during their progreſs, or towards the termination of the complaint. In the firſt caſe, it is either catarrhal, or a ſymptom of peripneumony; in the other, it is cauſed by the puſtules beſetting the larynx and fauces. In the third caſe, it proceeds from the variolous matter being carried to the lungs. There is ſometimes

likewiſe ſneezing, which is principally excited by the puſtules affecting the inſide of the noſe. I conſider this, however, as of very rare occurrence, although it was obſerved by Sagar †. In the epidemic ſmall-pox which he has deſcribed, towards the end of the third, or about the beginning of the fourth ſtage, he found an uneaſy pain of the bones take place in all the limbs, laſting twelve, or, at moſt, twenty-four hours. Infants, who were principally troubled with this ſymptom, ſhrieked aloud, toſſed themſelves about, and were very reſtleſs and peeviſh during the whole time of its prevalence. After which the pain diſappeared, and was ſucceeded by an œdematous ſwelling of the limbs, which was favourably ſubſtituted in place of the ſwelling of the face. But when the pain exceeded the period already mentioned, it was a certain proof of the immediate approach of death. Sagar alſo obſerved, that in ſome patients the variolous matter was of ſo cauſtic and corroſive a nature, as to completely deſtroy the fauces, uvula, velum pendulum, palate, jaw, and noſtrils, and to cauſe the very teeth to fall out of their ſockets ‡. Such are the principal ſymptoms, which, when they occur in ſmall-pox, require particular attention to regulate the method of cure

* L. c. c. iv. † L. c. p. 19. ‡ *Id.* n. 20.

210. Laſtly, it remains for me to make ſome obſervations concerning the ſymptoms themſelves.

For theſe muſt not only be conſidered, each of them ſeparately, as has already been done, but alſo taken conjointly, that the peculiar nature of the diſeaſe, on which the method of cure principally depends, may be diſtinguiſhed with more certainty. For when they are ſuch as ſhew any deviation in the complaint from its regular, mild, and benign diſpoſition, on being conſidered, they will be found to be not of one kind, but manifold. They are principally divided into three heads, viz. comprehending ſuch as are *inflammatory*, *nervous*, or malignant and typhous, and *putrid*. Symptoms of the firſt ſtamp are generally obſerved in perſons of ſtrong firm fibres, whoſe ſyſtem abounds with much denſe blood, and who are addicted to rich living. In ſuch patients the variolous contagion excites a very violent febrile motion, accompanied with a quick, full, hard, tenſe pulſe; violent, great, or difficult reſpiration, or ſmall, ſhort, and frequent; unuſual redneſs of the face and eyes; exceſſive heat and thirſt; very acute pain of the head, back, loins, and members; dry red tongue; very deep coloured urine; and quicker and fuller vibrations of the carotids and temporal arteries. Hence frequently the lungs, brain, eyes, fauces, and other parts, are attacked with no ſlight inflammations. The blood which is drawn, has a firm, compact, ſtrongly-adhering craſſamentum, without the ſe-

rous part, covered with a red or yellow, or reddiſh white, tenacious inflammatory * cruſt †.

* From the white, dry, ſwelled, hot tongue, and from its being marked with pimples riſing above the ſurface, Sagar contends, that the inflammatory cruſt, in the blood which is drawn, may be foreſeen. † Huxh. *Eſſay on Small-pox.*

211. The oppoſite of theſe (210.) are the ſymptoms we have named *nervous*, or *malignant*, and *typhous*, namely, ſuch as occur in *ſlow nervous fevers:* as when the patient, before being attacked with the ſmall-pox, is long in a feeble ſtate, and, after being attacked, becomes much more languid; when the fever is not great; when the pulſe is weak, ſmall, quick, and irregular; when there is dejection of ſpirits; when the face is pallid; when the looks are haggard, and ſorrowful; when the urine is watery and crude; when the thirſt is ſlight; when the heat is moderate, and ſometimes leſs than natural; when the head is heavy, and apt to be affected with giddineſs; together with trembling of the limbs, nauſea, an inclination to vomit, ſickneſs, coma vigil, ſlight delirium, and univerſal laſſitude. When the diſeaſe is more malignant, ſo much are the ſenſibility and irritability blunted, that no ſickneſs, vomiting, or reſtleſſneſs, haraſs the patient. Frequently, in ſuch a ſtate of inſenſibility, ſix, ſeven, eight, or nine days are ſpent. At length the variolous eruption appears, being generally

of a bad kind, paliſh, crude, depreſſed, and lingering, and never becoming properly ripe. For the puſtules remain, flat, flaccid, and almoſt empty, or run into bliſters, filled with a crude, aqueous, ichorous fluid, until towards the end of the diſeaſe, thoſe on the face terminate in a diſagreeable black cruſt, or one of a dirty aſh colour and cadaverous appearance, which adheres faſt to the ſkin.

* Huxh. l. c.

212. Laſtly, we pronounce the preſence of the putrid ſymptoms, when the blood in the ſmall-pox is ſo thin and diſſolved, that it ſeems almoſt to be verging on putrefaction. Then indeed the ſymptoms of the inflammatory diatheſis are not preſent (210.); in place of which all the ſymptoms manifeſt a putrid tenuity, and ready corruptibility of the fluids. The nervous ſymptoms (211.) are either intirely wanting, or, if they are preſent, they are conjoined with ſymptoms of alkaleſcence and diſſolution of the texture of the blood. The breath, ſweat, and urine, emit a bad ſmell; the pulſe is languid, yielding to the ſlighteſt preſſure, and ſoftly riſing again; petechiæ, ecchymoſes, and weals, appear on the ſkin; the body is emaciated and the ſtrength exhauſted with immoderate hemorrhages; the puſtules become black and gangrenous, and frequently, on the efflóreſcence taking place, they appear ſanguineous, and are apt to diſcharge

blood. That happens principally when the pox are very ſmall and diſtinct, though attended with ſymptoms of malignity, or when the heating regimen has been employed, or when they take place in a ſcorbutic dyſcraſy of the fluids. Inſtances are adduced in par. 197. 198. But care muſt be taken not to confound theſe with the watery, ichorous, and cryſtalline ſmall-pox, and the ſpecies called *ſiliquoſæ* (199.), which muſt be intirely ſeparated from the genuine putrid kind. Theſe diſtinctions, therefore, being pointed out by their ſymptoms (210. 211. 212.), require the greateſt attention to prevent our committing any ſerious miſtake in adminiſtering the proper remedies. *(Id. ib.)*

THE PROGNOSIS.

213. BUT it is not enough for the phyſician to recogniſe diſeaſes by their peculiar marks, and to employ a proper method of cure in them; for frequently diſeaſes, although their nature be known, elude every attempt of art; while, on the other hand, patients, even when the nature of the diſeaſe is not known, recover either by the efforts of nature alone, or by the accidental aid of medicine. Hence it happens, that from the favourable or unfavourable iſſue of the diſeaſe, we are intitled to draw no concluſion concerning the phyſician's ſkill. Sometimes the moſt judicious practitioners are diſappointed of their ex-

pectations by a fatal termination happening, while the moſt ignorant at times exult in the ſucceſs of their method of treatment. But the principal merit of the practitioner lies in foreſeeing with how much or how little danger the diſeaſe is attended, or what is likely to be its termination, which will appear to no one who has not had the moſt extenſive experience. Whoever, then, is deſirous of riſing above mediocrity in the profeſſion, ought to excel in this department of the practice. As ſmall-pox, therefore, are of a manifold nature, and are not attended with an uniform degree of danger, nor always terminate in the ſame manner, it will be neither unprofitable nor ſuperfluous to preſent the ſtudent with the reſult of the numerous obſervations made by phyſicians on the ſubject of the prognoſis. But as theſe prognoſtics are of two kinds, namely, either ſuch as point out the nature of the future diſeaſe, or ſuch as inform us of the nature, and what will be the iſſue of the complaint when already preſent, they are properly diſtinguiſhed into *preceding* and *concomitant* ones. I ſhall ſpeak of the former in the firſt place, and next turn my attention to the latter.

214. We muſt firſt inquire into the patient's health previous to the complaint; whether it was good, whether he was of a ſound habit of body, and whether he uſed to lead an eaſy kind of life. In that caſe we have reaſon to expect

ſmall-pox of a better kind, as being generally good or bad according to the condition of the body and fluids previous to their appearance. On the other hand, a vitiated ſtate of the fluids, the debility which is left by previous diſeaſes, bad living, grief, intoxication, loading the ſtomach with too much meat, particularly fleſh and the farinacea, ſtrumous tumours, a ſcorbutic, venereal, herpetic, ſcabby, or phthiſical taint, and the complaint being combined with worms and other diſeaſes, give us reaſon to ſuſpect the dangerous nature of the ſmall-pox. I ſay give us reaſon to *ſuſpect* it; becauſe from a bad habit of body, ſcrofula, ſpina ventoſa, and other ſimilar affections, the malignity of ſmall-pox cannot to a certainty be foreſeen; as the complaint has ſometimes been obſerved to occur in theſe habits in a very mild degree. Hence De Haën * drew a proper concluſion, when he obſerved: "A bad prediſpoſition of the body may either increaſe the danger of the diſeaſe or not; but it is a matter of uncertainty." But a habit of body moderately fat †; a ſoft white ſkin; a freſh colour, a ſerene, chearful face; lively, but not too ſparkling eyes, generally promiſe a mild diſeaſe; while a malignant one may be expected, if the patient is of a ſlender make, if his ſkin is dry and hard, his complexion dark, his appearance grave and mournful; if his eyes are languid

or red, his hair black, and his voice rough and hoarſe. Hence the age better calculated for taking the complaint is that of three or four years, or, at moſt, the period included between the laſt-mentioned time and fourteen, than that which is too young and tender, or advanced life, or, which is worſe ſtill, old age. It is of great conſequence to be born of parents who have had the benign ſmall-pox, not to labour under plethora, nor to be exhauſted with hemorrhages; otherwiſe ſmall-pox of a bad kind may be apprehended: although Meade ‡ has ſometimes obſerved the benign ſmall-pox ſupervene on preceding evacuations. Nor are they to be expected to turn out better in pregnant or puerperal women, or thoſe whoſe menſtrual flow is irregular or difficult, or in ſuch as are newly married ‖. A ſalubrious ſtate of the air, likewiſe, in which malignant or putrid diſeaſes are not common, contributes greatly to the benignity of the ſmall-pox: for if preceding warm and moiſt ſeaſons have rendered the body unhealthy, and prediſpoſed the blood to putrefaction; or if exanthematic, malignant, putrid, or inflammatory diſorders already prevail, it cannot but happen that the ſmall-pox will partake ſomewhat of their malignant nature.

* *Rat. Cont.* T. 1. c. v. † Young people, who are very fat, when ſeized with ſmall-pox, are ſaid by Varnier (*Journ. de Méd.* T. v. p. 152.) to be in great danger, becauſe their whole fat is converted into pus, and gangrene and putrefac-

tion very quickly follow. ‡ L. c. c. iv. ‖ Roſen, *Malad. des Enfans*, p. 130. All the pregnant women affected with ſmall-pox, whom Varnier attended (l. c.), experienced abortions.

213. We muſt then obſerve whether the ſmall-pox prevail ſporadically or epidemically. The former are generally milder than the latter. If they are epidemic, we ought next to inquire into their nature, to aſcertain whether it be benign or dangerous. For ſome epidemies are very benign, while others are malignant and bad. Generally in ſalubrious ſtates of the air they are of a milder diſpoſition, eſpecially if a ſhort time has elapſed ſince the laſt epidemy that prevailed; but more malignant, if the ſmall-pox have not appeared for ſome time. It is better to be affected with ſmall-pox at the beginning, or towards the end of the epidemy, than during its progreſs, or at its height; during the ſpring-time than in a warm ſummer, or cold winter *; when the body is ſound, and the belly not loaded with ſordes, than otherwiſe. For the epidemic ſmall-pox, like meaſles, appear generally in February and March, rage with more violence in the ſummer-time, and become milder in autumn. Hence they are generally more benign at the beginning and towards the end. The diſtinct ones, alſo, are generally free from danger, if they be properly treated, and are not malignant. The confluent,

coherent, and mixed ſpecies, eſpecially when malignant, are attended with more danger. On the whole, if ſymptoms of the inflammatory diatheſis are preſent (210.), if the ſtrength is not impaired, and there are no marks of malignity, however violent and dangerous the diſeaſe is, it is to be hoped that it may be very much alleviated by a proper method of treatment. On the other hand, when the ſtrength is inſufficient, as happens in the ſmall-pox attended with nervous ſymptoms, or in the malignant kind (211.), or in the putrid (212.), every attempt of art is rendered abortive †.

* Ludwig, on the other hand, is of opinion, "that the ſmall-pox in ſummer and winter are generally milder than in ſpring or autumn," (*Inſt. Med. Clin.* § 182.). It is proper, therefore, to attend to the nature of the ſeaſon and prevailing epidemy. For no fact with regard to diſeaſes holds ſo univerſally, as not to admit ſometimes of an exception. † Störck, *Med. Pract.* P. 1. p. 278.

216. When treating of the hiſtory of each ſpecies, and enumerating its peculiar marks, I did not omit likewiſe occaſionally touching on ſuch as indicate a milder or more ſevere complaint, and a favourable or unfavourable termination. It is unneceſſary, therefore, to recapitulate here all that has already been ſaid on the ſubject, as the obſervations formerly made may be conſulted by the ſtudent. I truſt I then ſufficiently explained ſuch of the confluent ſpecies as

are attended with greater danger than uſual; namely, the *eryſipelatous* (193. 194.), *morbillous* (195.), *coherent* (196.), *ſanguineous*, *gangrenous*, and *putrid* kinds (197. 198.), the *cryſtalline*, or *lymphatic*, and *ſiliquoſæ*, &c. (199.). With regard, however, to the *ſanguineous* ſpecies in particular, it is conſidered as being much more dangerous than the *cryſtalline*; but the *verrucoſæ* are more dangerous than the *cryſtalline* pox, when they are truly malignant; becauſe the cryſtalline ſpecies never ſuppurates. It may be obſerved, however, that they ſometimes are carried off by the cutaneous perſpiration, or that the thicker matter may be excreted along with the urine diſcharged. But the *verrucoſæ* are ſaid to occaſion greater danger, becauſe they cannot be reſolved either by ſuppuration, or by other excretions. Hence Rhaſes * and Meade † have pronounced them to be fatal: this, however, I ſuppoſe, muſt be underſtood of the malignant kind.

* *De Var.* c. viii. † L. c. c. 3.

217. Having previouſly aſcertained theſe points in a general way, we muſt next proceed to thoſe marks which contribute particularly to the prognoſis in the ſeveral ſtages of each kind. In the firſt ſtage there is ſeldom ſaid to be danger, unleſs it ariſe from dentition, or other diſeaſes with which the complaint is conjoined. In it ſlight pain of the head and back; gentle heat; moderate thirſt; an equal pulſe, differing little from

the natural one; ſufficient ſtrength; none, or little vomiting; eaſy, gentle reſpiration; calm and refreſhing ſleep; no ſickneſs or reſtleſſneſs; a tolerably good appetite; and no uneaſineſs in the abdomen; point out that the diſeaſe will prove extremely mild (169.) †. The more the diſeaſe departs from this very mild kind, the more ſevere is it. Hence acute pains of the head and loins; great thirſt; profuſe ſweats; frequent and very troubleſome vomiting; reſtleſſneſs and ſickneſs; watching, or deep ſleep; ſtrong pulſe, varying, or, what is worſe, ſmall, irregular, and weak pulſe, with loſs of ſtrength, tremors of the feet and hands; gripes; nauſea; loathing of food; difficult, anxious, and broken reſpiration; diſcover the ſeverity and malignity of the diſeaſe ‡. But we ought to attend to the fixed pains, reſembling pleuritic, colic, iſchiatic, and other ſuch pains unconnected with the ſymptoms of ſmall-pox. For I have frequently obſerved them not only retard the eruption ſometimes to the ninth day, but alſo preceding the moſt malignant and fatal kinds of ſmall-pox. With regard to want of appetite, however, provided other bad ſymptoms are abſent, we need not be much concerned; for it often happens that very mild ſmall-pox occur, during the whole of which the patient hardly takes either food or drink, except a very little wine, without receiving any injury. With regard to the fever, we muſt guard againſt the de-

ceitful appearance of mildneſs it puts on, at the beginning, and turn our attention to its progreſs from the beginning to the commencement of the eruption ‖. According to the longer or ſhorter duration of the firſt ſtage, Home affirms § that the nature of the diſeaſe is either benign or malignant; but that by no means holds univerſally. It applies rather to the diſtinct kind. I have already (193.) enumerated, among the worſt ſymptoms of the complaint, the want of vomiting and reſtleſſneſs, and a certain appearance of tranquillity, which Morton, in the ſame manner, conſidered to be bad. But theſe prognoſtics are confirmed only when the patient is not ſenſible of the violence of the diſeaſe, on account of his extreme languor, and lies in a ſtate of ſtupor, oppreſſed with coma; while the pulſe is weak, the urine is paſſed thin, and the other bad ſymptoms, elſewhere enumerated (193. 194.), occur. But that urine which is of the colour of canary wine is conſidered as being of the beſt kind ¶; eſpecially when it has a ſmooth, white, copious cloud floating in it, or depoſits a ſimilar ſediment, without any other bad ſign. In this ſtage, alſo, or at the beginning of the following one, ſometimes petechiæ and purple ſpots break out, and alſo hæmaturia, or hemoptoſis, come on, always portending an unfavourable event, but ſometimes proving ſo fatal that the patient expires before the eruption, or when it has ſcarcely made its

appearance **. That happened chiefly in the epidemic ſmall-pox of the year 1681, in which purple ſpots appeared before the eruption, and haſtened the patient's death ††.

* Schacht, l. c. c. xiii. § viii. † Lobb, *On Small-pox*, Introduct. Roſen, *Malad. des Enfans*, p. 130. ‡ *Id.* l. c. || Azzoguid. l. c. p. xiv. § L. c. ¶ Lobb, l. c. ** Syd. *Diſ. Epiſt.* p. 404. †† *Id. ib.*

218. In the other ſtage, according to the diverſity of the ſymptoms, the complaint is attended with various degrees of danger *. A premature eruption, or that which is conſpicuous, thickly ſpread, conſiſting of ſmall puſtules, appearing within ſixty hours, particularly on the face, is conſidered as affording a bad ſign; as alſo, when the puſtules run together, or are attended with extreme itching; and *vice verſa* †. Generally the fewer they are on the face, the milder do they prove ‡. If at the beginning of the eruption a looſeneſs occurs ||, it is a bad ſign; eſpecially in grown up people affected with diſtinct or confluent ſmall-pox; although this by no means holds invariably. For ſometimes the gaſtric colluvies and vitiated bile, which would have aggravated the diſeaſe, are advantageouſly drawn off by the looſeneſs. The more the puſtules are depreſſed, and the leſs the fever abates after the eruption, the more imminent is the danger; and otherwiſe. The delirium which follows the eruption, and, ſtill more, phrenitis, ſu-

pervening on the fourth day of the eruption, are very alarming §, as being the forerunner of a fatal termination ¶. Nor muſt we place much reliance on the remiſſion of the delirium, if the fever continues with the ſame violence **. In this ſame ſtage, inflammation of the fauces, difficult deglutition, frequent, anxious, and interrupted reſpiration, indicate that the internal parts are affected, not without danger ††, particularly if the patient be forced to breathe with his mouth open, in conſequence of the ſtuffing of the noſe. On the other hand, the noſe and fauces being clear, and few puſtules taking place around the former, afford a favourable preſage ‡‡.

* Schacht, l. c. c. xxii. † Roſen, l. c. ‡ Home, l. c. || Roſen, l. c. § Home, l. c. ¶ Meade, l. c. c. 3. ** Home, l. c. †† Lobb, l. c. p. 53. ‡‡ Roſen, l. c.

219. The prognoſtics in the third ſtage are derived principally from the manner of the ſuppuration. It is moſt favourable and conſiſtent with the laws of the ſyſtem, for the ſuppuration to happen on the ſeventh, eighth, ninth, tenth, and eleventh days, in the puſtules of the face; and next upon the other parts of the body on the twelfth and thirteenth day, with a ſenſe of pain, and great ſenſibility in the parts where the puſtules are; and it is a good ſign for the puſtules to become turgid, tenſe, and painful *. Hence we have more reaſon to entertain hopes the riper the puſtules are †, and the redder the ſpaces be-

tween them are, being of a colour like that of damaſk roſes ‡. On the other hand, if the puſtules, or intervening ſpaces, are pale, or livid, or they are flaccid and free of pain, or depreſſed, or black in the middle, or attended with blackiſh purple petechiæ, they afford a proof that death is about to take place ‖. But white, viſcid, ſluggiſh, yellow pus, completely filling the veſicles, is a favourable ſymptom; while that which is brown, thin, or too ſoon becomes yellow, or is too ſcanty, is unfavourable. The ſwelling of the palpebræ about the eighth day, and of the head about the beginning of the ninth, and its being continued to the eleventh, affords a favourable prognoſtic §.

* Lobb, l. c. p. 49. Roſen, l. c. † Meade, l. c. c. iii. ‡ Sydenh. Mort. Hom. l. c. ‖ Home, l. c. Roſen, l. c. Sagar, l. c. p. 20. § Lobb, l. c. p. 50.

220. The face alſo has its peculiar marks. It is a favourable ſymptom, when it is uniformly ſwelled, ſo as to ſhut up the eyes, or ſcarcely ſwelled at all, as generally happens in the mildeſt ſmall-pox. But its being very thickly covered with puſtules, without being attended with any ſwelling, or only with a ſwelling of the lips and palpebræ *, is a bad ſign. If, however, on a detumeſcence of the face taking place, or the ptyaliſm ceaſing,—which generally happens on the eleventh day,—firſt the arms and hands, and then the legs and feet, do not fall ſucceſſively, it

is a proof of almoſt certain death †. The collapſe of the puſtules, unleſs it be ſucceeded by the ptylaliſm, or ſome other copious excretion, as well as the want of the ptyaliſm, affords an unfavourable prognoſtic in the confluent ſpecies in grown people, as it is exceedingly neceſſary and uſeful, not only in the confluent ſmall-pox, but does not want its uſe even in the diſtinct kind, when it ſupervenes in it, as it ſometimes does. The gnaſhing of the teeth, alſo, in infants and children, both when awake and aſleep, or any other convulſive motion, gives juſt reaſon for apprehenſion ‡. In the diſtinct ſmall-pox, the eighth day generally proves fatal; but in the confluent, as I have already mentioned, the eleventh ‖. But we may learn much ſooner that there will be imminent danger on the eleventh day from the ſmallneſs and number of the puſtules only; as the danger, or fatal event, frequently ſeems in a great meaſure to depend upon the multitude or paucity of the puſtules §. As the flow of ſaliva, commencing with the eruption, and continuing to the preſent period to run off eaſily and thin, in the confluent ſmall-pox of adults; or in the ſmall-pox of children there being none, or very little, gives grounds for favourable expectations,—ſo its flowing with difficulty, being viſcid, and quickly ceaſing, or ſuddenly ſuppreſſed, threatens deſtruction ¶. But both in the diſtinct and confluent ſmall-pox, the

greateſt danger is to be apprehended from the ſuppuratory fever. If it is violent, accompanied with headach, loſs of ſtrength, redneſs of the eyes, anxiety, reſtleſſneſs, delirium, oppreſſion and ſtraitening at the cheſt, it announces almoſt certain death **; while it is ſafeſt, during all this ſtage, for there to be preſent a ſlight fever, or tranquil ſleep, and eaſy and regular reſpiration ††.

* Roſen, l. c. † Syd. Mor. Hom. Roſen, l. c. ‡ Sagar, l. c. p. 55. ‖ Syden. *Diſ. Ep.* p. 407. § *Id. ib.* p. 404. ¶ Mort. Roſ. Schacht, l. c. § xxix. ** Syden. Roſen, l. c. Schacht. †† Roſen, l. c. Baglivi obſerves: "One of the beſt ſymptoms in ſmall-pox is the reſpiration being good, although the other ſymptoms are ſevere, as I have repeatedly obſerved." *De Reſpirat. in Acut.*

221. As in the two firſt ſtages, ſo in the third, a looſeneſs, unleſs proceeding from a collection of vitiated chyle in the *primæ viæ*, is generally condemned as hurtful in the diſtinct and benign ſmall-pox *. But in the confluent ſmall-pox of children, it not only prevails during almoſt the whole courſe of the diſeaſe, as I have remarked, but generally proves ſerviceable by withdrawing ſome portion of the redundant variolous matter. If the ptyaliſm, on cold being caught, is ſuppreſſed, it is a dangerous ſign. At this time, alſo, I have already pronounced the pain in the bones, which ſometimes ſupervenes, with great reſtleſſneſs, if it exceeds twenty-four hours, ſalutary; but, when prolonged beyond that period, fatal,

as we learn from Sagar †. Likewiſe hiccup occurring about the end of this ſtage, or about the beginning of the following, or ulcers ariſing in the mouth or fauces, are not free of danger ‡. Shivering alſo, or rigor, occurring at the height of the diſeaſe, or during the ſecondary fever, is a bad prognoſtic ‖.

* Lobb, l. c. p. 50. † L. c. p. 19. ‡ Lobb, l. c. p. 54.
‖ Huxh. *De Aëre et Morb. Epid.* T. 1. p. 37.

222. Moderate heat, both in the third and fourth ſtage, is ranked among the ſalutary ſymptoms. The belly on the twelfth or thirteenth day, becoming moderately looſe, but not ſo as to exhauſt the ſtrength, both in the confluent ſmall-pox, and in the malignant diſtinct kind, contributes very much to alleviate and reſolve the diſeaſe *. On the other hand, an immoderate looſeneſs with gripes affording no relief; ſtools mixed with pus or blood; ſwelling and pain of the epigaſtrium, indicating gangrene of the ſtomach or inteſtines; obſtinate coſtiveneſs, likewiſe black tongue, covered with aphthæ, thirſt, and drinking with extreme avidity; denote great and immediate danger. It is a fatal ſymptom when the urine is voided ſparingly, thin, and pale; when the patient cannot make water; when delirium and convulſions are preſent; and, laſtly, when the ſtrokes of the carotid and temporal arteries are quicker and ſtronger, whilſt they are languid at the wriſts. For, by theſe marks,

not only is phrenitis, but death itſelf, indicated. We may expect a favourable termination, however, if the deglutition is eaſy, if the tongue preſerves its natural appearance, if the patient is diſtreſſed with no internal pain †; if the drying of the puſtules proceeds in the ſame manner in which the eruption went on. But there being no exſiccation, or but a lingering one, as well as repeated ſucceſſions of cruſts ‡, ſhew that the diſeaſe is not without danger.

* Lobb, l. c. p. 51. Roſen, l. c. † *Id. ib.* ‡ *Id. ib.*

223. But a few more general obſervations remain to be made, which are neceſſary to complete the doctrine of the prognoſtics. On the whole, petechiæ and bloody urine, at whatever ſtage they come on, likewiſe the total ſuppreſſion of the eruption, and the ſecondary fever which follows the ratio of the number of the puſtules, in particular pave the way to a fatal termination *. Pregnant women, on being attacked with ſmall-pox, are not only very apt to miſcarry, but alſo, both on account of the *puerperal fever* which frequently ſupervenes, and on account of the coming on of an hemorrhage being apprehended, generally run very imminent riſk. Hyſterical affections, ſpaſms, cold and trembling, or rigor, are ſymptoms of a very inauſpicious kind †. The voiding of urine, or ſtools, unconſciouſly; profuſe, or cold, clammy ſweats, or colliquative ones, or thoſe which break out in drops, are conſidered as the immediate

forerunners of death. Tubercles, or red tumours, frequently betray themſelves towards the end of the diſeaſe, and affect the adipoſe membrane. If they undergo ſuppuration, and are quickly opened, they generally anſwer the purpoſe of a critical evacuation; but when they do not ſuppurate, or open at the proper time, they denote one of two things, namely, either defect of the *vis vitæ*, or the ſtriking in of the purulent matter ‡. Theſe tubercles more frequently happen in patients who have laboured under hæmaturia, and have eſcaped by employing vitriolic acid and bliſters, as Meade obſerves ‖. But ſuch patients are alſo liable to glandular ſwellings, which do not ſuppurate, and gangrenous ulcers of the tonſils. It appears, therefore, that the variolous virus cannot be carried off with more ſafety, or more effectually, than by means of ſuppuration §. Sagar ſaw ſeveral patients, who, beſides the uſual ſuppurating ſmall-pox, were affected with the *cryſtalline* and *verrucoſe* ſpecies at the ſame time. During the period of ſuppuration they lay forgetful, and regardleſs of themſelves, until they were carried off, as it were unexpectedly, as I have already noticed from the ſame author (199.). He was ſurpriſed, however, that they were neither affected with fever, nor ſwelling of the face, nor with any ptyaliſm ¶.

* Syden. l. c. p. 413. † Lobb, l. c. p. 53. ‡ *Id. ib.* p. 54. Roſ. l. c. ‖ *Id. ib.* Sag. l. c. p. 20. § L. c. c. 3. ¶ L. c. p. 21.

THE CURE.

224. HAVING delivered as accurate a hiſtory of ſmall-pox as I could, and collected the obſervations of diſtinguiſhed medical writers from all hands, preferring prolixity to too ſuccinct a diſcuſſion, I ſhall now proceed to the cure. It muſt be obſerved, in the firſt place, that nature in ſmall-pox, as in other exanthematic diſeaſes, attempts the critical expulſion of the heterogeneous principle (4.), with which the ſyſtem is ſtimulated, to the ſurface, and the freeing herſelf from every noxious fluid, by inducing ſmall phlegmons on the ſurface, and changing them into laudable pus. But though ſhe ſometimes attempts that by a gentle, and almoſt inſenſible motion, ſhe generally attains it by exciting a degree of fever, which is called the *febris apparatus*, or *contagii* (167.). It again requires a certain degree and time to become capable of preparing, extricating, and expelling the variolous virus, as happens in fermentations, that the fermenting liquor may be able to ſeparate and expel the heterogeneous, impure, and uſeleſs ſubſtances. But it ſeems peculiar to the variolous miaſma, not only to excite a certain appearance of fermentation, but alſo, like a ferment, to aſſimilate the fluids more or leſs to its own nature. It conſequently follows, that, if the motion of nature be neither exceſſive nor defective, it ought ne-

ver to be disturbed by art, but allowed to go on until she completes her work. But if it is either too torpid and inert, or too violent, it is then proper to rouse it gently and cautiously, or to restrain it *. Particular care, however, should be taken to prevent as much as possible the assimilation of the fluids to the variolous ferment, which, it is generally allowed, consists almost intirely in the employing of a proper regimen, particularly with regard to diet.

* These observations correspond with the excellent rules laid down by Sydenham, in treating of the regular small-pox of the years 1667, 1668, and 1669, where he says the indications are: "1. To preserve an uniform circulation in the blood, which may neither occasion a premature separation by its too great violence, nor retard it by its torpor, or cause an improper one; 2. To support the little abscesses or pustules with the greatest care, that after running through the usual course, they may at length carry off the matter contained in them, and disappear themselves."

225. For it is said that nothing contributes more to aggravate the fever, and assimilate the sound fluids to the variolous poison, than excessive heat of the bed and bed-chamber *; as by means of it the heat of the blood, which, in the contagious stage, is very nearly allied to the heat and motion of fermentation, is excited so much, that almost all the fluids, losing their pristine bland disposition, acquire a new and bad quality, analogous to the variolous ferment. On which

account Sydenham adviſes patients not to betake themſelves to bed till the intire eruption has appeared; that is, not before the ſixth day from the beginning of the diſeaſe, or the third or fourth from the commencement of the eruption. Moreover, after that time he ſuſpects the heat of the bed to be of ſo pernicious a tendency, that he does not heſitate to derive from it the watching, phrenitis, and other dangerous ſymptoms †. He therefore propoſes keeping the patients out of bed in the day-time, for ſix days after, as far as the ſtrength will permit, eſpecially when the number of the puſtules is ſo great as to require being reſtrained. But they muſt not be any longer kept out of bed when an acrid pain in the puſtules is felt, or a propenſity to fainting ſeems to require reſt in the horizontal poſture. He grants, however, that in the benign diſtinct ſmall-pox ‡, and after having let blood, there is leſs neceſſity for remaining out of bed; as in them the blood is not in ſuch a ſtate of fervour, nor is there ſo much reaſon to apprehend the aſſimilation already mentioned. He alſo excepts the caſe in which eclampſia, or epilepſy, has come on before the eruption; for he then orders the patient to be carried to bed, and preſcribes cordials and paregorics conjoined, eſpecially laudanum to the extent of a few drops, and cantharides applied to the nape of the neck, in order to draw out the eruption ‖. Nor does he think that

theſe patients ought to be kept out of bed "who labour under exceſſive ſickneſs, violent fever, giddineſs, pain of the joints like that of rheumatiſm, and other ſuch ſymptoms which contra-indicate it." In ſuch patients, eſpecially when they were of the ſanguineous temperament, and in the prime of life, as they cannot remain out of bed, he uſed to endeavour to alleviate the complaint, firſt by bleeding from the arm, and next by an emetic a few hours after; by which he ſaw them ſo much relieved, that they became capable of remaining out of bed, as if in perfect health §.

* *Diſ. Ep.* p. 406. † *Ib.* p. 403. & 406. ‡ *Ib.* p. 407. ‖ *Ib.* p. 415. & 420. § *Ib.* p. 422.

226. Not only conſtant lying in bed muſt be avoided, but alſo too great heat of the bed, and continuing long in the ſame air, without its being renewed, particularly in the ſummer-time. For Sydenham * conſiders the admiſſion of freſh air as highly neceſſary. Nor does Meade † diſagree with him, as he extols the efficacy of freſh coldiſh air, and aſcribes many bad effects to that which is warm, cloſe, and infected with noxious halitus, rendering the reſpiration anxious and difficult, increaſing the fever and number of puſtules, and at length giving riſe to inflammations and gangrenes. All theſe facts are confirmed by De Haën ‡, who is a moſt faithful follower of

Sydenham, and ſpeaks in the higheſt terms of the frequent renewal of the air, the careful changing of the bed, and ventilating the cloaths and bed-chamber. For he affirms, that he knows nothing more efficacious,—and almoſt all modern writers agree with him, eſpecially ſuch as have experienced the utility of inoculation,—both for preventing and checking the malignity of the complaint, than remaining long out of bed during the day-time, cleanlineſs in point of bed-cloaths and bed, amuſing the patient's mind with pleaſant converſation, concerts of muſic, and in particular moderate walking in the open air ‖. But they tell us that it is impoſſible for a perſon who has not experienced them to conceive the very ſalutary effects to be derived from walking §. For they aſſert, that, when the patients are languid, anxious, and burning with the heat and violence of the fever, immediately on being brought into the open air, and, while ſupported by the attendants, made to attempt walking gently, they become refreſhed and chearful in a very ſhort time, reſume their ſtrength, breathe more freely, regain their ſpirits, and gradually walk about without any aſſiſtance; and that the fever ſubſides very much, the pulſe being quickly reſtored to greater moderation **.

* L. c. p. 407. † *De Var.* c. 3. ‡ *Rat. Cont.* T. 1. c. v. § vii. n. 4. ‖ *Id. ib.* n. 9. § Störck, *Med. Pract.* T. 1. p. 271. ** *Id. ib.*

227. Nor ought we to be ſurpriſed that ſo many advantages are derived from a circulation of pure air, as every ſtudent in phyſiology muſt know, that, by the admiſſion of pure air, not only the warm air of the room—impregnated with the effluvia of the patient, by which it is rendered unfit for carrying on the reſpiration—is completely diſperſed, the heat gradually diminiſhed, the lungs more eaſily expanded for drawing in the breath, and the heat and fermentation, as it were, of the blood, allayed; but alſo, that both the cutaneous and pulmonary inſenſible perſpiration are promoted, and in ſome meaſure called forth and attracted by the law of affinity and chemical ſolution, which the pure air affords; and thus, perhaps, a conſiderable part of the variolous miaſma is carried out and diſperſed by the inſenſible perſpiration. All which things are eſteemed of ſuch conſequence by the firſt writers, that they confidently deride the groundleſs fear of ſuch as think, that by the admiſſion of the pure air the eruption of the puſtules is checked, or their ſtriking in occaſioned; being convinced, by long and uniform experience, that the eruption in ſuch air appears much more eaſily, certainly, ſafely, and regularly *. If it is objected, however, that by ſuch a regimen the eruption of the puſtules has ſometimes been obſerved to be retarded, which cannot be denied, Sydenham affirms, that leſs danger is threatened by it than by the vitiation

of the fluids, which follows the oppoſite regimen, and occaſions, moreover, the appearance of a more violent fever on the eleventh day, in conſequence of vaſt numbers of the puſtules undergoing ſuppuration, and which often cuts off the patient †.

* Störck, l. c. p. 272. 273. † L. c. p. 413.

228. All theſe obſervations, concerning the heat of the bed and chamber, renewal of the air, walking, and other things to amuſe the mind, recommended by the beſt writers on the ſubject, muſt be always kept in view, as being both conſiſtent with reaſon, and confirmed by long experience. It muſt not be ſuppoſed, however, that this regimen is to be employed indiſcrimately, without reſtriction, and at any time of the year; or that becauſe it is uniformly attended with ſucceſs in the artificial ſmall-pox, that it will always turn out equally to our expectation in the natural ones. For there ſeems to be no ſmall diſtinction between the two, in conſequence of which the ſame regimen and method of cure is not always found applicable to both. For a very ſmall portion of the variolous pus, and indeed that which is of a more benign and better kind, is employed in imparting the ſmall-pox artificially, which is of great conſequence. The contagious matter, likewiſe, is inſerted as it were gradually, in a very ſafe part of the body, very diſtantly ſituate from the vital and interior parts.

As healthy a body as poſſible, a proper time of life, and very mild ſeaſon of the year, namely, the ſpring or autumn, are choſen. On which account, not only the contagious fever is generally very mild, but the ſtrength, appetite, and other functions, are but ſlightly injured in general, few puſtules, and theſe of the diſtinct and benign kind, break out, and, laſtly, the other ſtages of the diſeaſe are very mild. No wonder, therefore, that the inoculated patients walk about in the open air, and remain out of bed and awake without injury. On the other hand, in the natural ſmall-pox, a greater quantity of the variolous contagion generally enters the body, and vitiates the fluids. It is received principally by the mouth and noſtrils; and, moreover, the head, brain, lungs, ſtomach, and the moſt important viſcera, are chiefly affected by it. Hence more ſevere affections of all the functions take place. Beſides, people of all conſtitutions, habits, and ages, are alike ſubject to the complaint. They are affected, alſo, at any ſeaſon, even at an improper one, as during the heat of ſummer, or the cold of winter, or during the prevalence of other pernicious diſeaſes and malignant epidemies. On which account, both the fever which follows is often more violent, together with the other ſymptoms, and there is greater loſs of ſtrength, in ſo much that the patient cannot ſtand out of bed, and far leſs walk, without

fainting, eſpecially if the complaint is to turn out malignant and confluent; and their being combined with petechiæ or the miliary eruption, and the like, cauſe the natural ſmall-pox, not only to differ very much from the artificial, but to require even a different regimen and method of cure.

229. On which account both the ſtate of the patient's health, and age, and the time of year, and the quantity and degree of the contagion, ought to be carefully conſidered, and the plan of treatment ſhould be regulated accordingly. For inſtance, ſome things may be done in ſummer which are attended with danger in winter, and that which may be borne eaſily by a ſtout young man would overpower a weak perſon or child, or a delicate female, as Meade very properly remarks. But to put the matter in a clearer point of view, on the whole, the cold of winter ought to be corrected by the proper remedies, that the conſtriction of the ſkin may not check the appearance of the variolous matter, or repel it after it has already appeared, and alſo that the febrile motion which nature employs may not be ſo much checked as to become unavailing. It will be proper, therefore, ſometimes to attend to the advice of Morton and Meade, who propoſe confining the patients to bed for a few days before the eruption, that the whole ſkin may be relaxed with gentle warmth. It may be neceſſary to obſerve this when the ſkin has become too much conſtricted, either

by age, or in conſequence of the patient's habit of body, or manner of life, or preceding diſeaſes. But the exceſſive heat of ſummer may be corrected by uſing thin coverings, admitting cool air, or remaining ſome time out of bed. And, by the ſame means, exceſſive ardor of the fever may be recalled within bounds. It is equally raſh in the winter-time, or in cold weather, to cool the patients, or overcome the vital power, already too languid, as it is prepoſterous to ſcorch them in ſummer, and, as it were, add fuel to the fire.

* The obſervations which Lorry has made, in his Commentary on the Diſeaſes which prevailed in Paris in the year 1777, are ſo applicable to the ſubject, that I cannot help transferring them to this place. "I am convinced (he obſerves), that in a matter of ſuch importance, as the preſervation of the lives of mankind, every perſon who practiſes our profeſſion with honour ſeriouſly purſues the truth. But who can refrain from enthuſiaſm? I fear that the treatment of ſmall-pox has not remained free of it. The ancients employed cordials and alexipharmacs. I ſhall not take pains to refute that ſyſtem, which is now juſtly laid aſide. Ballonius, Fernelius, and Sanctus Marthius himſelf, though no phyſician, in his poem on Pædotrophia, have declaimed againſt this abuſe, and diſcuſſed the propriety of bleeding in the midſt of the eruption. Laſt century Sydenham delivered the ſureſt precepts concerning the cure of the ſmall-pox. Freind and Meade, who revived the moſt ancient method of cure recommended by Rhaſes, and likewiſe Helvetius, Sidobre, and Heque, have ſhewn of what conſequence it is in this diſeaſe, to admit the cold air, to keep the bed and cloaths clean, and to employ cooling drinks, as in all its ſtages it is truly inflammatory. But have not phyſicians for ſome time back abuſed theſe rules,

by expoſing patients to the exceſſive cold of a froſty atmoſphere? and have they not falſely preferred carefully keeping the ſkin cool, to the poſſibility of the eruption ſtriking in? Does not the ſwelling of the face and hands require a certain degree of warmth, and a certain diſpoſition of theſe parts to a gentle perſpiration? Is not that perſpiration, which certainly cannot take place in a froſty atmoſphere, when checked, transferred ſlowly and ſucceſſively, ſometimes to the breaſt, ſometimes to the joints, and ſometimes to the eyes? In convaleſcents, at the time when the whole maſs of blood is generally purified, ought we not to obſerve a proper regimen, for a long time, both with regard to diet and changing the air? *Hiſt. de la Soc. Roy. de Med.* T. 2. p. 11.

230. It will be ſafer, therefore, to ſteer a middle courſe, that is, neither to ſuffocate the patient with too much heat, nor to ſtarve him with cold, ſo as almoſt to obſtruct the cutaneous veſſels, or intirely derange the neceſſary motions of nature. I have frequently ſeen a ſlow lingering eruption, and depreſſed puſtules, ſucceſsfully called forth and raiſed by gentle heat of the bed and chamber. Nor has the imprudent admiſſion of air, eſpecially during the ſuppuration or exſiccation of the puſtules, even during the ſummer, been unattended with danger. I have ſometimes been ſurpriſed at metaſtaſes very quickly proving fatal, ariſing from this cauſe only, even in the diſtinct and benign kind. Melancholy inſtances of this kind no where occur more frequently than among the children of poor people, who generally dwell in ſmall apartments to be ſure, but badly defended from external injuries, and per-

vious almoſt on all hands to the air, wind, and cold, or who have ſcarcely any cloaths with which to cover themſelves in bed, or live in open halls, or lie under the open air, or are carried about from place to place. The ravages which ſmall-pox make in theſe caſes are almoſt incalculable. The caſes, therefore, in which the precepts already laid down are to be employed, and when the heat of the bed ought to be laid aſide, when the bed ought to be ventilated, and when it is allowable for the patient to appear in the open air, it is the buſineſs of a very ſkilful phyſician to determine. In general, the temperature of the bed and chamber ought not to be too great, and ſhould rather incline to cold, eſpecially when it it is ſummer, or the fever is very violent, and the puſtules are numerous and raging, as it were. Next, if exceſſive dryneſs be added to the heat, it will be of great ſervice to ſprinkle the floor with cold water, and to place live plants in the room, which are ſaid to abſorb the effluvia, and purify the air. But in ventilating the room, as it is proper occaſionally to clear it of the impure putrid effluvia, ſome moderation muſt be obſerved to prevent the admiſſion of ſudden cold, or the wind, or humidity, by which the eruption is retarded, or repreſſed. De Haën himſelf, though a very great advocate for renewing and cooling the air, confeſſes that it requires the greateſt attention. For he adviſes removing

the patient into an adjoining close apartment, while his bed-chamber is ventilated, that the windows and doors may be opened with more safety, without his running any risk from exposure to the cold air. He adds, moreover, that the bed should be placed in such a manner that the air of the window or door may not strike directly upon it *.

* *Rat. Cont.* T. 1. c. v. § vii. n. 4.

231. As the nature of the food to be employed constitutes no inconsiderable part of the regimen (224.), it will be proper to make some observations upon it, in order to point out that which is best calculated for the patient. Sucking infants require no other than their usual milk. On the whole, if there is great thirst and heat, that they may not load themselves with too great a quantity of milk, they may be allowed to drink toast and water, or a decoction of barley, rice, or grass, or even pure water, not only to quench the thirst, but to dilute and cool all the fluids. But the nurses ought to abstain from wine, too much animal food, from oily, sour, salted, and aromatic things, and others which prove too heating, and confine themselves to bland meats, chiefly of the vegetable kind, weak soups, fresh eggs, tender fresh-water fishes; and take much diluent cooling drink; while, above all things, their minds ought, as far as possible, to be kept tranquil and chearful.

232. Children, young people, and adults, if they have an appetite,—for they ſometimes have ſuch a loathing of food as not to eat any thing for ſeveral days,—ſhould be confined to very ſpare, fluid, and cooling diet, ſuch as the expreſſed juice of barley or rice; water-gruel of fine bread; ſweet, or ſubacid fruits, as prunes, cherries, ſtrawberries, pears, apples, eſpecially with ſugar, and the like, which have the effect alſo of gently purging the belly, and at the beginning of the complaint prove very ſerviceable. But if they have a diſlike to theſe alſo, they may be occaſionally allowed to take a little weak frog, chicken, or veal ſoup, without any injury. I have known ſome patients reject all kinds of food, without any injury, until the complaint had taken its turn, excepting cruſts of bread dipt in wine; which may be of ſervice, eſpecially when there is very great nauſea, perpetual vomiting, and great languor. But for drink may be given, water with lemon, citron, or orange juice, ſweetened with a little ſugar; decoctions of apples; weak emulſions of ſweet almonds, or lemon-ſeeds; the pureſt whey, &c. in the ſummer-time coldiſh, but in winter tepid, or at leaſt with the cold taken off.

233. Enough, then, of the regimen reſpecting the diet. The remaining part of the cure, which is derived from ſurgery and pharmacy, I ſhall juſt now diſcuſs in order, enumerating and weighing with impartiality the different remedies

which the particular ſtages and ſymptoms of each kind of ſmall-pox require. In the firſt ſtage, therefore, if the diſeaſe is perfectly mild, as it is in the moſt benign and diſtinct kind (169. et ſeq.), when either no fever, or a very ſlight one, accompanies the diſeaſe, or it is of ſuch a kind, that the moderate pulſe, the mild heat, eaſy gentle reſpiration, the head not being affected, there being no mental diſorder, and the other ſymptoms being milder than uſual, not only point out the full ſeparation of the variolous matter, but alſo that the ſuppuration and exſiccation of the puſtules may be expected at the proper time;—the whole of the cure ſhould be left to nature, and it is ſufficient to aſſiſt her operations merely with a proper regimen and bland diluents. On the whole, if the belly be too bound, it may be kept open with ſome emollient injection, that the inteſtines may be quickly freed from the ſordes, the retention of which would occaſion uneaſineſs.

234. But if the patient is really plethoric, if the fever is violent, if the pulſe is great, full and hard, or, on account of the exceſſive fulneſs of the veſſels, obſcure and ſuppreſſed, if there is great heat, dry ſkin, anxious reſpiration, flushed face, ſevere headach, or unuſual ſtupor, or coma, or delirium, and ſimilar affections, as happens in inflammatory diſeaſes (210.), and, moreover, the preceding ſtate of the air and former diſeaſes, or ſuch as accompany the complaint, evince an in-

flammatory diatheſis, bleeding then becomes neceſſary. In young people, in adults, and in people in the prime of life, it not unfrequently happens, that, on account of the violence of the fever and the continuance of the ſymptoms, bleeding twice or thrice becomes neceſſary *. But that may be done alſo at any other period of the diſeaſe, if any ſevere ſymptom indicates bleeding, and the ſtrength can bear it †. Nor ought it to occaſion any apprehenſion, providing the patient's ſtrength be kept in view, that the eruption about to take place may not be checked by means of the bleeding: for, on removing the exceſſive fulneſs of the veſſels, or relaxing the craſis of the blood, by which the eruption is ſometimes retarded, in general the ſeparation of the variolous matter, and its expulſion to the ſurface, are facilitated; nay, many bad conſequences, which would ſupervene in the courſe of the diſeaſe, as phrenitis, convulſions, and peripneumony, are thus prevented. It ſeldom happens that it is neceſſary to bleed very young children. If ever, however, plethora, convulſions, or other ſymptoms, eſpecially inflammatory ones, happening in them alſo require the letting of blood, and the blood cannot be drawn either from the jugular veins, or thoſe of the arm or hand; leeches applied to the temples, or behind the ears, in ſome meaſure ſupply its place. But we muſt not immediately proceed to

bleeding, from obſerving one or two ſymptoms indicating it, unleſs they remain conſtant and violent, or be of ſuch a kind as to leave no room for doubting the propriety of it. For it may be ſometimes omitted, or deferred, without the fear of any bad conſequence, nay, the fever, heat, anxiety, and delirium, have frequently been obſerved to abate, merely by employing diluent and attenuant antiphlogiſtic remedies, pure air, and diminiſhing the number of the cloaths ‡.

* I cannot help making a remark here on the celebrated Pitcairn, who, among his medical works, when treating of ſmall-pox (See his *Elem. Med. Phyſ. Math.*), does not heſitate to order "bleeding ſo long as the fever continues; and to continue it after the eruption, until the fever ceaſes." For every body muſt perceive how much ſuch a general rule, without exception, might miſlead young practitioners. Bleeding, therefore, ought not to be employed, or repeated, unleſs the real ſymptoms indicating it are preſent; nor ought it to be continued until the fever ceaſes, for in that caſe the patient would loſe his life before the fever departed. Nor is the fever to be dreaded ſo much, if it does not exceed bounds; becauſe, by means of it, as I have already ſhewn, nature forces the variolous matter to the ſurface, and frees herſelf from it. Nor muſt Sidobre's plan be followed; for he alſo, in the firſt ſtage, recommends bleeding without limitation, and preſcribes repeating it twice, thrice, four, five times, nay, ſix or eight times, according to the urgency of the ſymptoms, and the patient's ſtrength and age (*De Var.* § xxviii.). For it very rarely happens, that ſuch profuſe bleeding can be borne, or it is ſcarce ever neceſſary. Tiſſot has very properly obſerved, "In a mild diſeaſe it is uſeleſs, in a very mild or malignant one it is hurtful, in a ſevere complaint it muſt be repeated at the beginning, until it appears from the pulſe, the relaxation of the ſkin, and remiſſion of the ſymptoms, that the

inflammation is diminiſhed. *Ep. V. Arg.* p. 38. † Meade, l. c. c. 3. ‡ Störck, l. c. p. 271.

235. After bleeding, when it is neceſſary, if the fever and inflammatory ſymptoms nevertheleſs continue, we muſt have recourſe to antiphlogiſtic remedies, particularly diluent, attenuant, and cooling drink, as barley-water, to which nitre, oxymel, or tart vegetable juices have been added, until the fever and ſymptoms remit *: nor is it improper ſometimes, in exceſſive heat of the fluids, and violent action of the heart, and irritability of the arteries, to add ſome vitriolic or nitric acid, ſo as to produce an agreeable degree of acidity. It has been obſerved ſometimes, that the ſtrength, which at the beginning appeared greater during the employment of theſe remedies, or even independently of them, is ſuddenly reduced, and becomes ſcarce capable of ſupporting the remainder of the diſeaſe. In that caſe, omitting refrigerants and correctives, we muſt have recourſe to ſtimulants and cordials, and perſiſt in the uſe of them, until the ſtrength being ſufficiently rouſed ſhews that their uſe may be laid aſide. In the mean time, proper attention muſt be paid to the precepts that have been delivered concerning the patient's remaining out of bed, and the renewal of the air †; and, at any other ſtage of the diſeaſe, if ſuch a degree of debility comes on, the phyſician ought to act juſt in the ſame manner.

* Störck, l. c. p. 270. † *Id. ib.* p. 279. 280.

236. After employing bleeding, or not, as there may be occaſion, and preſcribing the proper internal remedies, according to the indications, it remains to be determined, whether the patient ought to be purged. If, from the patient's preceding manner of living, or from ſymptoms of bile or phlegm collected in the *primæ viæ*, which I have elſewhere frequently mentioned, but particularly when treating of the *acute gaſtric fever* (Vol. I. par. 373.), it may be conjectured that the ſtomach or inteſtines abound with a crude, corrupted, bilious, or mucous colluvies, there can be no doubt that it ought to be removed either by vomiting or purging, as may be found moſt convenient * (Vol. I. par. 391. 392.). Sometimes the epidemy itſelf, to which it is always proper to pay attention, or the quantity of the variolous poiſon which has entered the ſtomach, or its being retained there occaſioning uneaſineſs, which alone is ſufficient to excite nauſea, and vomiting without any thing being thrown up,—require that the *primæ viæ* ſhould be ſhaken with ſomewhat rougher vomiting, as moſt practitioners mention to have been done occaſionally with the greateſt advantage, particularly in the epidemy already mentioned from Haller (198.). For that phyſician aſſiſted the vomiting ſo much by an emetic, as to cauſe a copious diſcharge from the ſtomach at leaſt eight times; having obſerved, that as often as the vomiting, which was almoſt an uniform

ſymptom, was ſuppreſſed, that a more unfavourable event was the conſequence †. But if emetics ſeem to be contra-indicated by other ſymptoms, or the propriety of employing them may be called in queſtion, it is then the ſafeſt plan to gently remove the gaſtric colluvies, by means of ſome mild cathartic, as manna, or its ſyrup, or that of ſuccory, or of walnut-flowers, or by means of ſome neutral ſalt, or clyſters which are almoſt harmleſs. I ſay *gently*; for all immoderate exciting of the bowels ought to be avoided here. But whether vomiting or purging are employed, it is abſolutely proper to make a trial of one or other before the appearance of the ſmall-pox ‡. But it is proper to abſtain from both, if the vomiting, nauſea, cardialgia, or colic pain, are known to ariſe, not from a gaſtric colluvies, nor from worms, the ſymptoms of which I have already pointed out (208., nor from the quantity of the contagious matter entering and vellicating the ſtomach, but merely from the febrile commotion, or the derangement of the nerves (208.), as generally happens in tender, delicate conſtitutions. For then theſe ſymptoms, as ſoon as the whole variolous poiſon has been forced to the ſurface, generally abate of their own acord. It is proper, likewiſe to be on one's guard againſt emetics and cathartics, if any ſymptoms, even of ſlight inflammation of the ſtomach, or inteſtines, are pre-

ſent. For it is found, that every thing apt to occaſion irritation ought to be avoided, and that only the gentleſt cooling, demulcent, diluent, and emollient remedies ſhould be employed, both internally and externally. But as it not unfrequently happens, eſpecially in children, that worms are combined with ſordes in the *primæ viæ*, I generally add to the cathartics ſome anthelmintic, as worm-ſeed, *corallina maritima*, or ſome ſimilar remedy, the more readily to eject the worms.

* *Id. ib.* p. 270. † *Opuſ. Path. Cit.* p. 114. 115. Meade, l. c. c. 3. ‡ Tiſſot obſerves, that if bad ſymptoms come on at the beginning, from depraved digeſtion, the belly ſhould be purged with cream of tartar, tamarinds, and ſo forth, until all the ſymptoms ariſing from that cauſe diſappear (*Ep. Var. Arg.* p. 50.). In the caſe of peeviſh patients, who refuſe cathartics, a ſmall doſe of tartar emetic may be added to the drink, not to excite vomiting, but to move the belly, which is attended with advantage (*Id.* l. c. p. 51.). Even when the diſeaſe is farther advanced, if there be ſymptoms of indigeſtion, purging may be attempted (*Id. ib.*). But the ſame author holds the following to be the ſymptoms indicating its preſence: 1. Greater headach, or drowſineſs, than might be expected from the force of the fever; 2. bad breath, loathing of food, and nauſea remaining even after the eruption; 3. in the benign complaint, the fever remaining, and being accompanied with anxiety, even after the eruption; 4. fetid ſtools, and frequently fetid diarrhœa, without depreſſion of the puſtules; 5. delirium; 6. crude, turbid urine, and ſwelled belly.

237. But when the ſtrength in this ſtage is much reduced, and the nervous ſyſtem particularly affected, as in the ſlow nervous or malig-

nant fever, with the ſymptoms elſewhere enumerated (211.), or there is a very rapid tendency in the blood to colliquation and putrefaction (212.), as generally happens in ſome ſpecies of *malignant diſtinct ſmall-pox*, particularly ſuch as are combined with petechiæ, the miliary eruption, and black or livid ſpots (278.), or as occurs in theſe *malignant confluent* ſmall-pox (292.—299.) which quickly terminate in almoſt univerſal gangrene;—another plan of cure muſt be adopted. In the firſt caſe, the regimen ought to be temperate, but not ſuch as to check the fever too much, and weaken the ſtrength more and more, or repel the petechial or miliary eruption. The patient, therefore, ought to indulge a little more in lying, and cover himſelf with a greater number of bedcloaths, and not expoſe himſelf raſhly to the open air, and he ought to change his bed, and ventilate the chamber with caution. The internal remedies ought to be diluent, but at the ſame time moderately exciting, and ſo as to gently rouſe the motion of the heart and arteries. For the drink, therefore, may be given, infuſions of elder and teil-flowers, thoſe of the tops of the *carduus benedictus*, or of the leaves of *ſcordium*, or decoctions of ſcorzonera root, and of graſs, or barley, with the addition of a little wine, or whey and wine prepared together. But if the torpor of the ſyſtem requires being rouſed ſtill more, it will not be improper occaſionally to add ſome cordial

and alexipharmac remedy *. With the ſame view ſomewhat more generous living ſhould be enjoined, as animal ſoups, and the yolks of eggs, prepared with citron-juice. In the other caſe, if, at the beginning of the firſt ſtage, ſymptoms of putrid diſſolution of the fluids are preſent, or the prevailing epidemy ſhews a tendency to it, we muſt ſpeedily oppoſe it with antiſeptics, properly ſo called, as the ſtrong acids, camphor, Peruvian bark, and others ſo often mentioned, at the ſame time attending to the ventilation of the bed and chamber, and making the patient remain, if poſſible, ſometime out of bed in the cool open air. But bleeding is inadmiſſible in either caſe, as it immediately exhauſts the ſtrength, and accelerates the putrefaction and fatal termination.

* I ſhall here quote a paſſage of Morton's very much in point, which is to be found in *Exercit. Tert. de Febr. Inflammat.* c. vii. p. 65. His words are: "For as, in conſequence of covering the patients with a number of bed-cloaths, and the improper adminiſtration of heating remedies, the ſpirits being forced into too great a flow muſt neceſſarily be diſſipated; ſo being checked by too great cold of the ſurrounding air, they cannot ſufficiently expand themſelves, and aſſail the enemy with their native vigor. On which account I never could be led to adopt the opinion of the celebrated Sydenham, who acrimoniouſly contends for the employment of the cold regimen in every ſpecies of ſmall-pox, making his treatment to conſiſt of ſpirits of vitriol, the white decoction, ſyrup of meconium, and ſimilar refrigerants, together with cold air admitted into the apartment; but ſo averſe is he to the employment of alexipharmacs, that he can ſcarcely be brought to allow of ever ſo ſmall a quantity of plague-water, theriac, com-

pound powder of crabs claws, or of poſſet alterated with the flowers of marigold and hartſhorn ſhavings, however peſtilential and deleterious the diſeaſe may be." And after making a few obſervations, which for brevity I ſhall paſs over here, he proceeds as follows: "When the diſeaſe is found to be very fatal, the ſpirits are completely overcome by the poiſon, in conſequence of which, defect rather than exceſs of the heat of body is manifeſted by the weak and irregular pulſation of the arteries, and pale colour of the urine. Who in ſuch a caſe would recommend the employment of the cold regimen? Beſides, the author himſelf frequently acknowledges, that the confluent ſmall-pox ſometimes equal, or even ſurpaſs, the plague in violence. But who ever attempted the cure of the plague by uſing ſuch a regimen? With reſpect to the hiſtories of the ſucceſsful cures which he mentions to have performed in this manner, I have no doubt, that after the ſpirits had been long and improperly diſſipated, by the application of too much heat, particularly externally, the patient, on being ſuddenly raiſed out of bed, or, at leaſt, freed from the weight of the bed-cloaths, derived advantage from being in ſome meaſure cooled, in conſequence of which, the ſpirits having gradually recovered a mild temperature, were capable of oppoſing the diſeaſe with more ſucceſs; or, in a mild ſtate of the diſeaſe, in which they have completely overcome the poiſon, were capable of bearing the bad effects of this regimen, without any remarkable injury. But I poſitively deny that the cold regimen ought to be uniformly employed at the beginning of the diſeaſe, or when, from the abſence of pyrexia, and the weak pulſe, it appears that the ſpirits have been overpowered by the poiſon. As I have frequently ſeen very confluent and fatal ſmall-pox, in which not the ſmalleſt drop or grain of any alexipharmac, or any warm regimen, had been employed during the contagious or eruptive ſtage, and ſtrongly ſuſpected that they turned out fatal, on no other account than becauſe, during the *apparatus*, that is, before the ſpirits were affected with necroſis, their ſtrength had not been duly rouſed by ſuch remedies, which happens much more when they are depreſſed,

in conſequence of being checked by the cold regimen. In which opinion I perſiſt the rather, becauſe—a fact which I ſuppoſe is well known to other practitioners—I remember, perhaps an hundred times, of patients, after uſing too cold a regimen in the following ſtages of the complaint, becoming affected with watching, delirium, ſevere diarrhœa, frequent fainting, colliquative ſweats, and other very fatal ſymptoms, and covered with petechiæ, and an eruption uniformly depreſſed and dry, marked as if with a black coal, who were ſometimes ſuddenly, ſometimes gradually, ſnatched from the very jaws of death, by the conſtant employment of alexipharmacs conjoined with opiates and bliſters. Which obſervation is confirmed by ſeveral hiſtories ſelected from many others, which I ſhall ſubjoin at the end of this treatiſe (theſe are 19. 21. 22. 25. 27. 29. 31. 47. 48. 49. 50.); but in theſe hiſtories I do not wiſh the moſt malignant ſmall-pox to be underſtood, the poiſon of which has acquired the higheſt degree of virulence. For it ſometimes happens, that at the beginning it reduces the ſtrength in ſuch a manner, that, diſſolving the conſiſtence of the fluids, death, which is announced by an exceſſive hemorrhage and black ſpots occurring, threatens the patient, and cannot be averted (as he himſelf confeſſes), either by alexipharmacs or any other means. I ſhall paſs over the unfortunate, not to ſay fatal, iſſue of this cold regimen, which not only his followers, but alſo he himſelf, to his diſgrace, ſometimes experienced; on which account,—as I have been told,—during the latter years of his life, he in ſome meaſure relaxed of his rigour in this reſpect. I ſhall therefore, for the ſake of truth, however reluctantly, take the liberty of differing in opinion with the great Sydenham, concerning the regimen to be employed in this diſeaſe. It ſhould be regulated with ſuch moderation, that the heat ought to approach as near as poſſible to the temperature of the ſpirits, and be preſerved uniform. The patient, therefore, immediately on being attacked with the diſeaſe, ſhould betake himſelf to bed, and remain there, covered with the uſual cloaths, and not loaded with too great a quantity. He ought to be kept as free

as poſſible from care, fear, and other paſſions, and ſhould not ſpeak, but enjoy ſleep, or at leaſt remain at reſt. The air of the chamber, in the winter-time, ought to be corrected by keeping up a blazing fire, but, in the heat of ſummer, he ought not to be coopt up in bed as in a priſon. In other reſpects, every thing ſhould be ordered ſo equably, that the ſpirits may not be forced into exceſſive motion, or diſſipated, or be rendered deficient by being checked too much." So far does Morton proceed, and, indeed, is ſupported by reaſon and experience. His opinion was adopted, not only by Meade and Huxham, his countrymen, who were diveſted of all partiality, but alſo before them it had been eſpouſed by Harvey, the cotemporary of Sydenham, and an induſtrious improver of medical ſcience, from whom I ſhall hereafter borrow a particular hiſtory to point out the bad effects reſulting from Sydenham's treatment.

238. But as there are ſeveral other ſymptoms peculiar, as it were, to this ſtage, I ſhall proceed to ſhew the treatment which is calculated to the chief of them. The conſtant and acute headach, if it is very urgent, and does not yield to the other remedies employed, is very much relieved by tepid or moderately-warm bathing of the feet, repeated in the morning and evening, for at leaſt half an hour each time; but, during the remaining intervals, the warm dough of fermented bread, or the pulp of rich figs, may be applied to the ſoles of the feet. Some adviſe continuing theſe only until the beginning of the eruption *. But De Haën, for the ſake of producing revulſion, even when the headach was not urgent, ordered the upper and lower extremities to be daily immerſed in warm water for at leaſt half an hour, not only

in the firſt ſtage, but alſo during the intire remainder of the diſeaſe, promiſing to himſelf great advantages, beſides what the patients derive from remaining out of bed. For, in conſequence of the water being abſorbed by the lymphatic veins and paſſages, the whole blood is remarkably diſſolved and corrected, the violence of the diſeaſe is derived from the head and face, and is called out from the internal to the external parts of the ſyſtem †, as the more copious eruption generally taking place on the parts which have been relaxed and fomented by the warm bath, ſeems to evince ‡.

* Störck, l. c. p. 270. † *Rat. Cont.* T. 1. c. v. § vii. n. 5.

‡ Concerning the utility of the warm bath, employed both partially and univerſally, the ableſt phyſicians are not yet altogether agreed. I find Ludwig, particularly (*De Top. Med. uſu in Var. Vid. Adverſ. Med. Pract.* vol. i. P. 3. p. 473.), ſtriving to ſhew that the bath, bathing the feet, and fomentations, both in the contagious ſtage, and immediately previouſly to the eruption, are either ſuperfluous, or incapable of promoting the eruption; and that he finds from experience, that thoſe parts are covered with fewer puſtules which have been fomented with warm water, than the others; and, on the other hand, that the eruption is more frequently and effectually accelerated by the dry, cold air. The employment of the bath and fomentations is much more decidedly condemned by a celebrated phyſician of Naples (*De Sedib. Var.*), who confidently aſſerts that the eruption is checked by moiſture, and promoted by dryneſs. But thoſe who reject the bath and fomentations are oppoſed by a much greater number of advocates in favour of them. In particular, I find, in the account of the diſeaſes which prevailed at Edinburgh in the year 1733 (*Med.*

Eſſays, vol. 3.), that in a good many patients, who employed warm bathing of their feet once or twice a-day, until a complete eruption took place, the head was not only wonderfully relieved, but even a more copious eruption appeared upon the legs and feet. And this ought to have more weight, as being ſupported by experience, and not depending upon theory. De Haën not only mentions Nicolaus Florentinus, Aſtatius, Foreſt, Sydenham, Boerhaave, and other moſt reſpectable authors, who, by means of ſuch bathing, promoted the eruption, but affirms, from his own experience, that in general a more copious eruption takes place on the arms and legs, after bathing them, although he does not deny, at the ſame time, that this ſometimes did not happen. But no impartial perſon can ever conclude, from the bath ſometimes being inefficacious, that it is to be thrown aſide as ſuperfluous or inert, notwithſtanding of the many inſtances of its proving ſo ſalutary. De Haën's opinion has lately been adopted by Azzoguidi (*Let. ſopra il Vaj.* p. xxiv.), who, beſides, remarks that ſometimes the whole body ſhould be immerſed in the bath, and that it occaſions a ſucceſsful eruption, particularly in children. He adds, moreover, that this method was recommended many years ago by Bouvard, and, after being long neglected, that it was at length deſervedly revived by Senac and others. But that mention of the employment of warm vapours and fomentations in the cure of ſmall-pox was formerly made by Rhaſes, Avicenna, and Diaſcorides, Nerucci tells us, from the teſtimony of Freind, in a letter publiſhed by him in the year 1748, *concerning the uſe of the tepid bath* in the cure of this diſeaſe. He there ſhews, both by the trials which he himſelf made, and thoſe of others, the vaſt advantage to be derived from immerſing the whole body in the warm-bath every day for half an hour during the whole progreſs of the complaint; principally induced by the authority of Fiſcher, who, in the year 1721, in the diſtrict of Arga, a town in Upper Hungary, ſaw the baths there employed with the greateſt advantage, and afterwards, in the years 1727 and 1728, employed them himſelf in the epidemic ſmall-pox which prevailed in his own

country, with no leſs ſucceſs. Immediately on obſerving infants, children, or young people to be attacked with the fever, he immerſed them in the bath moderately warm, twice a-day, morning and evening, generally continuing the uſe of it for an hour and a half each time. Generally on the ſecond day, ſeldom on the fourth, the ſmall-pox broke out at once over the whole body; they quickly became full, and arrived at their proper ſize, and burſt on the fifth, ſixth, and very ſeldom after the ſeventh day; and he then bathed the patients, not with water, but whey, or milk diluted with two thirds of water, which, in the ſame manner as the former, he continued to uſe till the exſiccation was completed, which generally happened on the ninth or twelfth day. The ſame fact has been confirmed by the repeated experiments of our countryman Morand (*Della Cura del Vaj. Ancona* 1753, p. 32. § xiii.), in the very dangerous and malignant epidemy of the years 1737 and 1741, in which, after experiencing the inefficacy of every other method of cure, he employed the tepid bath from the beginning to the end of the diſeaſe, after the manner of Fiſcher, and derived the higheſt advantage from it. The utility of the tepid bath in expediting the eruption, and gently promoting the ſuppuration, was likewiſe experienced in France by Marteau, as appears from five hiſtories publiſhed in 1768 in the *Journ. de Méd.* T. 28. p. 314. Nay, with Clifton, he did not heſitate to recommend it as mitigating the ſecondary fever. To theſe authorities, omitting many others, I ſhall only add that of Tiſſot, who not only approved of pediluvium, and fomenting the whole body with the vapours of warm water, but likewiſe employed the bath univerſally, both with the view of producing revulſion from the head, and calling the matter to the ſurface. For which reaſons he ſeems to be convinced, whenever either the fluids are carried to the head with too great violence, or the eruption takes place ſlowly, on account of the languid vital power, or the dryneſs and thickneſs of the ſkin impedes the eruption; or the puſtules, from cold being admitted, or ſudden terror, or from the propelling power of the heart and arteries being diminiſhed, at

once become depreſſed,—that tepid, or not very warm bathing of the feet, hands, nay, even of the whole body, will not only be proper, but even neceſſary.

239. Nor is this ſtage ſometimes free of phrenitis (205.), which, if it be conjoined with ſymptoms of plethora, great heat, and increaſed action of the vital powers (234.), and ſeems to depend upon exceſſive quantity and quickened motion of the blood, beſides bleeding, correctives, diluents, and antiphlogiſtic remedies, it requires alſo the tepid pediluvium juſt now recommended (238.). But if their violence is not allayed, and the head, on account of the exceſſive heat, continues to be violently affected, ſome propoſe bleeding the capillary veſſels, which is ſaid ſometimes to have occaſioned very great relief *. From ſimilar cauſes, alſo, *coma vigil*, or *ſomnolentum*, likewiſe ſometimes ariſes (205.). When this happens, almoſt the ſame treatment is applicable; but then, each time after bathing the feet, the cataplaſms, which are applied to the ſoles of the feet to produce revulſion and excite the patient, ought to be rendered more active with the powder of muſtard or vinegar of ſquills. Nay, if it is foreſeen that the confluent ſmall-pox are about to take place, not only the heat of the bed ought to be carefully avoided, but even a bliſter ſhould be applied to the nape of the neck †.

* Morand, *Della Cura del Vaj.* p. 43. † Syd. *Diſſ. Ep.* p. 421.

240. I have already ſpoken (169.) of the epilepſy which ſometimes precedes the eruption as a ſymptom of this ſtage. This ſymptom generally quickly diſappears, being in a ſhort time ſucceeded by an eruption of benign and diſtinct ſmall-pox, ſo as ſcarcely to require any medicine, unleſs it is protracted too long, or ariſes from ſome other cauſe independently of the variolous contagion. Sydenham, however, in order the more readily to free the nervous ſyſtem from the irritating variolous matter, adviſes immediately putting the patient to bed *, as the ſmall-pox which generally appear, being for the moſt part diſtinct and benign, bear the heat of the bed without injury; and a bliſter may be applied to the nape of the neck, or back of the head, which may be accompanied with ſome cordial, or anodyne, not only to blunt the nervous ſenſibility, but alſo to aſſiſt the eruption. To a boy of three years of age he uſed to give five drops of laudanum, in a ſpoonful of plague-water, as it is called, or ſome kind of cordial water. Which doſe may be both diminiſhed and increaſed, not only according to the patient's age, temperament, and habit, but alſo according to the ſtrength of the laudanum. For it ſometimes becomes ſo thick by ſtanding as to contain conſiderably more opium than when it was thinner. Beſides theſe remedies, Meade adviſes the application of bliſters to the ſoles of the feet, the more certainly to produce

revulſion from the brain †. I have ſometimes obſerved warm and moiſt fomentations wrapt round the legs prove of the greateſt ſervice, as fulfilling both intentions. In place of the laudanum, Hoffman's mineral anodyne may be ſubſtituted, or Pegoldt's antepileptic ſpirit of vitriol; both of which are very ſafe, and remarkable for their anodyne power. But if dentition is ſuſpected to be the cauſe of the epileptic fits, then ſpirit of hartſhorn, or ſuccinated ſpirit of hartſhorn, given to the extent of a few drops in ſome cephalic water, is preferable to all other remedies.

* *Diſſert. Epiſt.* p. 420. † *De Var.* c. 4.

241. As in the caſe of epilepſy (240.), therefore, and very great tendency in the nervous ſyſtem to ſpaſms, while, however, no plethora is preſent, and the vital powers are much reduced, it is allowable to have recourſe to paregorics and opiates;—ſo, alſo, when the patient is diſtreſſed with any acute pain, and becomes faint, as not unfrequently happens in the malignant confluent ſmall-pox (187.), it muſt of courſe be allayed with opium, and the ſtrength of the ſyſtem, which is almoſt ſinking, muſt be rouſed by its cordial power. The looſeneſs, alſo, to which children in particular are liable in the firſt ſtage (170. 186.), ſometimes requires attention. If it proceeds from a colluvies in the *primæ viæ*, and is truly ſtercoraceous, fetid, and eaſily borne, it

ought by no means to be checked, nay, it ought rather to be gently kept up, by occaſionally giving a little wine, or ſome other gentle cordial, to ſtrengthen the patient *. But if it proceeds from the variolous virus being improperly carried to the inteſtines, or weakens the patient, as frequently happens in the firſt ſtage of the malignant confluent ſmall-pox (193.), or a great diſcharge of ſerous colliquative fluid comes off, attended with loſs of ſtrength, it is quite proper to check it with opium †, and ſometimes even by cantharides applied to the ſkin to draw the noxious fluid to the ſurface. Hence it appears, I think (240. 241.), that the uſe of opium cannot be altogether forbidden in the firſt ſtage of ſmall-pox ‡, as ſome perhaps have ſuppoſed.

* Varnier, *Journ. de Méd.* T. v. p. 152. Avoût 1756. † *Id. ib.* and Tiſſot, *Ep. Var. Arg.* p. 52. and Morton, *Exerc.* 3. *De Feb. Inflam.* c. vii. p. 71. ‡ For although Meade (*De Var.* c. 3.), and Morton (*Exerc.* 3. c. vii. p. 71.), and others, have reprobated the uſe of opium and narcotics, before a full eruption taking place, for many reaſons, but chiefly becauſe it is ſuppoſed to check the ſeparation of the variolous matter, and to increaſe the delirium cauſed by the violence of the fever, or to lull the ſpirits, and to diminiſh and check their ſtrength; yet both of them, after the epileptic fits in this ſtage, in the caſe of very violent pains, and great tendency to ſpaſms and convulſions, in ſome people who are endowed with too great ſenſibility and irritability, as alſo when an immoderate and debilitating looſeneſs, which is inimical to the eruption, takes place, as I have already ſaid (240. 241.), are not altogether averſe to laudanum and paregorics, and are obliged, though reluctantly, to adopt the doctrine of Sydenham, who aſcribed to his lauda-

num the power not only of allaying the convulſions, and checking exceſſive evacuations, but alſo of promoting the eruption of puſtules (*Diſſ. Ep.* p. 420.). In which reſpect I find two eminent phyſicians agreeing in ſentiment, Störck (*Pract. Med.* P. I.), who is certainly a very great advocate for narcotics; and Tiſſot, who, although he reprobates them ſo much as neither to allow any ſoporific to be given during the fever of the firſt ſtage, or after it (*Ep. Var. Arg.* p. 17.); yet, on account of their cordial and diaphoretic power, when there is occaſion for them in this ſtage, he does not reject them. Gatti alſo ſeems to ſubſcribe to their opinion (*Nouv. Reflex.*), as he in ſome meaſure admits of ſedatives and paregorics in the febrile ſtage, before the appearance of the eruption. But ſince, concerning the utility of theſe remedies, various arguments are employed on both ſides, ſome extolling, and others reprobating them, in the moſt unqualified manner, we ſhall not want an opportunity hereafter of reviewing their arguments, and giving our own opinion on them. In this place, however, I ſhall only obſerve, that in this diſeaſe opium is ſeldom admiſſible, as it is allowed by the moſt approved authors to poſſeſs certain properties, on account of which it is ſuppoſed to be injurious in theſe diſeaſes. For it is conſidered as being, 1. a very warm ſudorific; 2. as being very irritating; 3. as a ſeptic which induces gangrene; 4. as rarefying and ſuppreſſing all the excretions, except that of the ſweat; 5. as checking the ptyaliſm, in a particular manner; and, 6. by inducing ſleep, which is often found to be hurtful in ſmall-pox, as increaſing the heat, fever, and affections of the head (Vide Tiſſot, *Ep. Var. Arg.* p. 8. to 17.). In which reſpects, although ſome things may appear exaggerated, ſtill, on the whole, there is a great deal of truth.

242. In this firſt ſtage not unfrequently hemorrhages come on, which, however, are not always alarming; for when they ariſe from ple-

thora and too great febrile motion, they are generally found to be ſalutary. But if the diſeaſe is more malignant, ſuch hemorrhages, namely, thoſe from the noſe, inteſtines, and uterus, but particularly the hemoptyſis and hæmaturia (207.), generally prove fatal, and, if they proceed from exceſſive tenuity and diſſolution of the blood, as they generally do, beſides the cooling regimen, require coagulating, inſpiſſating, and aſtringent remedies. Among theſe a principal rank is held by acids of all kinds, both vegetable and foſſil, which ought to be drunk in great abundance *. Next come paregorics, mixed with aſtringents. Sydenham, in the caſe of an hemoptyſis and hæmaturia, does not heſitate, firſt to let blood pretty liberally †, which I ſhould think allowable only in plethoric and ſtrong patients, for in the hæmaturia which comes on later in the diſeaſe, others have found bleeding hurtful ‡: next he recommends a draught compoſed of two ounces of the flowers of wild poppy, fourteen drops of laudanum, three drachms of diſtilled vinegar, and half an ounce of ſyrup of meconium. But the whole of this doſe muſt not be taken, excepting by an adult. He then proceeds to real aſtringents, as the terra lemnia, terra ſigillata, bolus armena, the corallium rubrum, laſtly, maſtich, and gum-arabic, as agglutinatives. Hoffman ſet a high value upon whey, in which the gum of cherries, or gum tragacanth, was diſſolved ‖. In

the higheſt degree of danger, and when the blood is greatly diſſolved, it may be proper to have recourſe to the ſerum lactis alluminoſum, as they call it, and the ſpecific of Helvetius. Some alſo propoſe bliſters of cantharides, particularly the Britiſh practitioners, who ſcarcely refrain from employing them even in diabetes.

* Tiſſot, *Ep. Var. Arg.* p. 31. 32. Syden. *De Febr. Putr. Var. Conſt. Superv.* p. 637. and *Schedul. Monit.* † *De Febr. Putr. &c. ib.* ‡ Saliſbury, *Epiſt. ad* Rich. Meade. ‖ *Cap. de Feb. Var.*

243. Immoderate and premature ſweats affect adults more in the diſtinct (149.) than the confluent (186.) kind of ſmall-pox. As they retard the eruption and riſing of the puſtules, they ought to be quickly checked by the patient's remaining out of bed, by cool, pure air, and uſing thin cloathing *. But I ſhall ſay nothing particular concerning the watching, reſtleſſneſs, and other uneaſy ſymptoms, which neceſſarily precede the eruption, unleſs they arrive at the higheſt degree, and require being mitigated by the employment of ſome anodyne, as they are generally borne without injury, and, after the eruption, of themſelves ceaſe intirely, or at leaſt are much relieved.

* Home, *Princ. Med. de Morb. Febr.* ſect. vii.

THE ERUPTION.

244. DURING the eruption the phyſician's whole care ſhould be directed to the ſyſtem's

freeing itſelf intirely of the variolous matter. If nature effects that of herſelf, ſo that the eruption goes on properly and regularly, as in the benign diſtinct (171. 172.), or confluent ſpecies, though not of the pernicious kind (186.), and, on its appearance, if the fever and its ſymptoms ceaſe, or at leaſt abate much, nothing is to be changed either in the regimen or in the diluent medicines, which appeared proper in the firſt ſtage, and which may be continued even to the end of the diſeaſe, unleſs ſome unuſual occurrence requires particular treatment.

245. But nature, as happens in the malignant ſmall-pox, both of the lingering (211.) and putrid (213.) kind, is often ſo completely overpowered with the poiſonous miaſma as to become almoſt incapable of effecting its expulſion: in which caſe it is manifeſt, that the ſyſtem ſhould be rouſed with bland cordials *. Moreover, from many other cauſes, which I have already pointed out (206.), the eruption is retarded, or carried on imperfectly. But the greater part of them weaken the vital powers, and diminiſh the motion from the centre to the ſurface. That the vital power is languid, appears in particular from the weak, ſmall, ſoft, and irregular pulſe. And it appears ſtill more clearly, if the patient himſelf is languid, and at the ſame time pale, anxious and diſturbed in his mind; or, alſo, if colourleſs puſtules appear here and there, quickly diſappear-

ing, or the ſkin becomes univerſally flaccid, and ſomewhat cold †. Among the proper cordials are enumerated particularly, warm infuſions of ſcordium, of carduus benedictus, of ruta capraria, of teil and elder flowers, to which has been added ſome of the ſyrup of contrayerva, or cinchona, or citron-bark, or the mineral anodyne, or elixir of vitriol, or ſome more powerful acid, if it be required by the extreme corruption and colliquation of the blood. In which caſe, likewiſe, camphor and a little wine are of wonderful ſervice.

* Home, *Princ. Med.* ſect. vii. † Sörck, P. I. p. 281.

246. But if bleeding, or purging, improperly employed, have reduced the ſtrength, or other exceſſive evacuations, even ſpontaneous ones, have occaſioned this evil (245.), analeptics and reſtoratives ought to be added to the cordials, and the immoderate evacuations muſt be ſtopped by uſing paregorics. And if the improper admiſſion of cold, or very cold weather, or too long ſitting up, or remaining out of bed, have retarded the appearance of the eruption;—then prudently increaſing the heat of the bed, reſt, and lying in bed, a greater number of bed-cloaths, and moderately warm drink, will be the proper remedies. In this manner have I more than once ſucceſsfully promoted a lingering eruption of the puſtules, or have ſo aſſiſted them when depreſſed, and of the ſpecies named *umbilicatæ*, that they quickly roſe, and

became quite full. When they appeared paliſh and too watery, the Peruvian bark gradually adminiſtered proved highly ſerviceable by its tonic, cordial, and antiſeptic power. Advantage is derived from the vapours of warm water received on the ſkin, from fomentations and tepid bathing, which afford remarkable relief when ſudden terror, rage, or ſome other paſſion of the mind, or ſome miſtake either of the patient or byſtanders, has checked the eruption, or repreſſed it after its actual appearance, eſpecially if at the ſame time any compoſition of opium, or poppy, is given internally. In which caſe it is better for the patient to abſtain from calefacient remedies, and to remain in the open air, carefully covering himſelf with cloaths, and uſing warm or tepid drink.

247. As ſoon as the ſtrength appears to be raiſed, the pulſe and heat revived, and the puſtules not only to break out in ſufficient numbers, but riſe and fill, and grow red; we muſt no longer urge the employment of cordials and the heating regimen, but gradually return to diluents and correctives. It not unfrequently happens, however, that by the employment of cordials the ſtrength is by no means rouſed, the puſtules remain low and depreſſed, their colour inclines to brown, a black ſpot appears in the pits, the ſkin lying between them is found to be flaccid and livid, nay, is here and there disfigured with black ſpots; blackiſh fetid urine, tinged with

blood, is paſſed, and other profuſe hemorrhages ſhew that the blood is diſſolved, corrupted, and verges on necroſis;—in which caſe the general opinion is, that the moſt powerful antiſeptics, mixed with cordials, ought to be employed, and conſtantly perſiſted in. If from the beginning, according to Huxham *, the ſmall-pox have a foul and livid appearance, and remain depreſſed, and the fever is rather of the ſlow kind, generous cordials muſt be exhibited, ſuch as ſaffron, compound powder of contrayerva, muſk, and the theriac of Andromachus; nay, even ſweet wine, whatever Sydenham may ſay to the contrary. Vinegar and vitriolic acid ſhould be added to the ordinary drink, which may conſiſt of barley-water, to correct the alkaleſcence and colliquative acrimony of the fluids, and reſtore its due craſis to the blood, which is almoſt in a ſtate of diſſolution. Likewiſe wine and water, or whey and wine, and bark taken in abundance †, and alſo camphor ‡, are preferable to other remedies, on account not only of the cordial, but alſo of the antiſeptic power they poſſeſs. In the mean time, eſpecially when the ſmall-pox are of the confluent kind, the patients, if at any time, certainly now require the pure air, by which not only the more ſevere ſymptoms are corrected, or prevented, but even the eruption itſelf promoted, the pure air performing the part, as it were, of an attracting *menſtruum*. And the efficacy of pure air in theſe

caſes is ſo highly prized by Störck, that he thinks the patients, when they complain of cold and flying ſhiverings, on being carried to the open air, deſerve no attention; in which reſpect, however, the phyſician would require being eminently diſtinguiſhed for prudence and judgment to avoid the imputation of raſhneſs, and prevent any accident happening to the patient.

* *De Aëre et Morb. Epid.* T. 2. p. 122. where he makes the following remarks. "In the malignant ſmall-pox, in which the puſtules are ſmall, black, or attended with a black pit, if any hope remains, it is in alexipharmacs of a ſomewhat auſtere kind, with a great deal of acid, ſuch as, the tincture of Peruvian bark, alexipharmacs with a great deal of the elixir of vitriol, frequently adding wine to theſe acids, eſpecially when the fever is going off, with copious, acidulous, demulcent drink." † Tiſſot (*Ep. Var. Arg.* p. 32. 33.) ſays of the Peruvian bark, "that it is proper only in the malignant ſmall-pox, in which the fibres are lax, the blood diſſolved and putrid, the higheſt debility takes place, and the approach of gangrene is feared; that in that caſe, when given to the extent of three, four, or five drachms daily, it proves of the higheſt advantage." ‡ Camphor is uſeful in the malignant ſmall-pox, eſpecially when mixed with acids, as vinegar, with which it is eaſily diſſolved when warm. It gently raiſes the ſtrength, and ſtimulates the fibres, checks the putrid virus, and draws it to the ſurface. *Id.* l. c. p. 33. ‖ *Med. Pract.* P. I.

248. In this lingering and difficult appearance of the eruption (245. 246.), or when the puſtules remain depreſſed (247.) in conſequence of the languid vital power, and greater malignity of the diſeaſe, when cordials and antiſeptics are

conſidered as neceſſary, ſome practitioners, after the example of Morton and Meade, propoſe likewiſe applying bliſters to the arms and legs. But when, together with the loſs of ſtrength, ſymptoms of putrid tenuity and colliquation are preſent, and there is a great tendency, all over the ſyſtem, to corruption and gangrene (247.), we muſt not proceed to the employment of bliſters and cantharides. For my part I conſider it as ſafe to employ them in a caſe of great debility, in a caſe of atony of the ſolids, when the fever and heat are ſlight, and the craſis of the blood intire, no plethora being preſent, and when there is no fear of gangrene coming on, and much more ſtill if the variolous matter, which ought to have been forced out, remaining in the ſyſtem, attacks the head, fauces, breaſt, and abdominal viſcera, injuring the functions of theſe parts. On the other hand, it is not ſafe, nay, it would even be pernicious, to employ them in circumſtances the reverſe of theſe *.

* Tiſſot in general condemns bliſters in the cure of ſmall-pox, 1. becauſe they increaſe the fever, inflammation, heat, and putrefaction; 2. becauſe they irritate the ſkin, while the inflammation, tenſion, and pain ought to be mitigated; 3. becauſe they rather check than excite the flow of urine; 4. becauſe they increaſe the pain, and conſequently the reſtleſſneſs; 5. becauſe they check the diſcharge by the belly. For which reaſons he intirely reprobates their uſe even in the comatoſe affections, for the diſcuſſion of which they are commonly uſed, if theſe affections proceed from the violence of the fever

and fulneſs of the veſſels. Hence it appears what caution and attention are requiſite before having recourſe to the uſe of bliſters (*Ep. Var. Arg.* p. 26.). Nor does Meade (*De Var.* p. 72.), ſpeaking of bliſters, explain himſelf with leſs caution, as he mentions that they may be applied to the arms and legs, when, in the caſe of a very bad complaint, the pulſe is ſmall and languid, without any remarkable ſwelling of the hands, and the patient is rather in a ſtate of torpor, than diſtreſſed with too much heat.

249. But the eruption is not retarded or depreſſed by theſe cauſes only (245. 246.). Sometimes the fulneſs of the veſſels, the increaſed motion of the blood, and the phlogiſtic diatheſis which is pointed out by the great, ſtrong, and hard pulſe, and ſometimes by the difficult reſpiration, retard its appearance. In which caſe, not cordials, nor exciting, nor healing remedies, but bleeding, refrigerants, diluents, and other antiphlogiſtic means promote and keep up the eruption *. Sometimes, likewiſe, a colluvies in the *primæ viæ* oppoſes the eruption, by inducing ſpaſms, and weakening or checking the motion of the heart. In that caſe it is evident that the eruption will be promoted merely by evacuating the noxious cauſe. Hence either emetics, which are conſidered by Huxham as being very efficacious in forcing the variolous matter to the ſurface, or gentle cathartics, eſpecially in the confluent ſmall-pox, in which part of the abundant variolous matter may be very advantageouſly

drawn off by purging †, remove the cauſe of the retardation or ſubſiding of the puſtules.

* Home, *Princ. Med. De Morb. Febr.* ſect. vii. Likewiſe Wintringham (*Edinb. Medic. Eſſays*, vol. ii.), who, perhaps, on this account, never ſaw antiphlogiſtics and moderate laxatives prove hurtful in robuſt and plethoric young people with denſe compact blood, but on the contrary always found them prove ſerviceable. † For Simſon (*Ed. Med. Eſſays*, Vol. vi.) always found gentle purging from the firſt eruption of the puſtules to the commencement of the ſuppuration, attended with advantage in the confluent ſmall-pox.

250. But if the fauces in this ſtage, as generally happens (171.), are painful, ſwelled, and inflamed, in conſequence of puſtules having riſen there, rendering deglutition difficult, the pain ought to be conſtantly mitigated with a mucilaginous linctus, and tepid, emollient drink, frequently taken; and a gargle of the ſame kind ſhould be employed. Decoctions of marſh-mallow root, barley, and mallow-flowers, either alone or mixed with milk, fulfil both intentions. But if theſe fail, and the evil increaſes, and like an inflammatory ſore throat ſeems to threaten ſuffocation, and is attended with excruciating pain, while the other ſymptoms do not contra-indicate it, the magnitude of the danger muſt be obviated by bleeding *. After it, if there be occaſion, we may produce revulſion from the fauces by a gentle cathartic of caſſia, or manna, by pediluvium; and when the danger is more urgent, by a bliſter applied to the nape of the neck, or by

ſurrounding the neck with an emollient cataplaſm.

* The reader will perhaps be ſurpriſed, that in the courſe of treating of the cure of ſmall-pox, I have neither here nor elſewhere made mention of cupping-glaſſes, which ſeveral propoſe employing in this complaint. The cauſe of my not having done ſo is obvious: I conſider that bleeding is more ſafely performed by opening a vein, than by ſcarifying the ſkin, in diſeaſes in which the exceſſive tenuity of the blood may occaſion fatal hemorrhages.

251. It is likewiſe proper to pay attention to the ptyaliſm which from the beginning of the eruption, or a little after, certainly attacks adults, at leaſt ſuch as labour under the confluent ſmall-pox in particular (287.), generally proving copious as it ought to be, in order that part of the variolous virus may be diſcharged in this way to the great relief of the patient. Caution, therefore, ought to be uſed that it may not be checked by ſudden cold, or cold drink, or by a diarrhœa, or by narcotics, or aſtringents. For this would be certain death to the patient: for nothing more certainly promotes and keeps up this flow of ſaliva than the frequent drinking of tepid diluents. Sometimes that ſalivary fluid, which is conſtantly diſcharged, is poſſeſſed of ſuch acrimony that it corrodes and ulcerates the parts like a cauſtic. It is proper in that caſe not only to waſh the mouth and fauces with milk and water, or decoctions of barley, or of marſh-mallow root; but great care muſt be taken that it may not be ſwallowed,

if we would prevent the bad conſequences, already taken notice of (188.) from Sagar.

252. In this ſtage, likewiſe, there are ſometimes hemorrhages, phrenitis, delirium, comatoſe affections, convulſions, anxiety, watching, and other very ſevere ſymptoms, eſpecially in the malignant confluent ſmall-pox, in which the matter being imperfectly forced out, paſſes from place to place, attacking the internal parts, and aggravating the fever, together with all its ſymptoms. I have already ſhewn (239. 240. 242.) the treatment which ought to be employed in the hemorrhages, in phrenitis, in both kinds of coma, and in the convulſions. But the watching, which is generally of long continuance, the anxiety and reſtleſſneſs, if they come on, being generally the peculiar marks of malignant confluent ſmall-pox, can ſcarcely be paſſed over without ſome attention being paid to them. For removing theſe, therefore, moſt writers, ſince Sydenham's time, inculcate the copious and frequent uſe of narcotics in this ſtage *. For immediately after the firſt ſtage they every night preſcribe the ſyrup of diacodium, or an emulſion with ſyrup of white poppy, or ſyrup of meconium, or laudanum, or pure opium, or pills of cynogloſſum, in doſes adapted to the patient's age. Thus they affirm, that they provide not only againſt the watching, reſtleſſneſs, and delirium, but alſo ſa-

vour the increaſe and filling of the puſtules ; and ſo confident of this are they, that if they do not procure reſt and ſleep by the exhibition of a narcotic in the evening, they repeat it in the morning, and even during the day, until ſleep is induced. But it is ſaid to be allowable principally in young people and adults, ſince infants are very apt to be injured by narcotics †, unleſs they are employed with the utmoſt caution. Others, however, entertain an intirely oppoſite opinion, and adviſe the greateſt care to be employed in preſcribing ſuch remedies, having learnt by experience that they occaſion a more copious flow of the blood to the head, oppreſs the brain, ſuppreſs the ptyaliſm which is ſo neceſſary, and check the uſeful diſcharge by the bowels. Nay, Simſon adds ‡, that the patients on the eighth and ninth day, in conſequence of the continued uſe even of the ſyrup of white poppy, which the followers of Sydenham recommend, expire oppreſſed with delirium, angina, or peripneumony. Sagar ‖, alſo, mentions their having proved hurtful in the epidemy which he has deſcribed §.

* Meade, *De Var.* c. 3. † Sydenham (*Diſſert. Epiſt.*), in the cure of the confluent ſmall-pox, truſted ſo much to paregorics, that he upheld them as ſpecifics, in the ſame manner as the bark in intermitting fevers. ‡ *Edin. Med. Eſſays*, vol. vi. ‖ L. c. § Sometimes in the moſt benign ſmall-pox of infants, when given to ſtop their crying on account of the pain of the puſtules, although it was conſidered as harmleſs, it cauſed a great determination of the blood to the

head, and the eyes and eye-brows became ſwelled. Tiſſot, l. c. p. 11.

253. In ſo doubtful a caſe, as far as I can judge, it appears to me that we ought to proceed with caution to the employment of narcotics, and not unleſs when compelled by neceſſity. If the watching, therefore, continues ſo obſtinately as to occaſion mental derangement and reduce the ſtrength, if the patients become very anxious and reſtleſs, if that happens either from the extreme itching or pain of the puſtules, if derangement of the nerves and the higheſt degree of ſenſibility rather appear to be the hurtful cauſe than a phlogoſis of the blood and internal parts, then, after diluents, correctives, and demulcent remedies have been uſed without effect, it will be allowable to allay theſe diſorders with ſome mild paregoric, and to repeat it occaſionally with caution; as in ſuch a caſe even the moſt cautious practitioners do not altogether refrain from bland paregorics *. It muſt be obſerved, however, that watching of every kind ought not too haſtily to be removed by employing ſoporifics, as it often happens in the confluent ſmall-pox that the patient paſſes ſix or ſeven days without ſleep, or experiencing any bad conſequence from it, as Tiſſot informs us †, while at the ſame time the ptyaliſm proceeds properly, and is attended with advantage, though, by means of the ſleep, it might have

been ſtopt to the great danger of the patient. It will alſo be of great conſequence to aſcertain whether theſe remedies agree with the patients. For ſome idioſyncraſies are affected with them in ſuch a manner, that the patients are rather agitated and heated exceſſively by them, than lulled to ſleep. On which account it is better to abſtain from them in ſuch conſtitutions, the propriety of which is acknowledged even by their warmeſt advocates ‡.

* Simſon, who reprobates all kinds of paregorics, in the caſe of very obſtinate watching, or intolerable itching, or when the puſtules are attended with very uneaſy pain, allows the patient ſome ſyrup of white poppy, providing the practitioner guards againſt the extent to which Sydenham and his followers carried that practice. *Edin. Med. Eſſays*, vol. vi.
† *Ep. Var. Arg.* p. 16. ‡ Störck, l. c. p. 288.

THE SUPPURATION.

254. I HAVE already ſhewn by what means the eruption ought to be promoted and ſupported. It remains to mention in what manner the ſuppuration of the puſtules ought to be brought about, ſince, in conſequence of being attended with the moſt ſevere ſymptoms, it frequently threatens the greateſt danger. In the diſtinct and mild kind, in the ſame manner as the former ſtages, the third one likewiſe is paſſed without great uneaſineſs. While the puſtules, however, are inflamed, and the pus generated, the ſkin becomes tenſe and painful, the fever returns, or is increaſed, but, on

the ſuppuration being finiſhed, it quickly departs. At this time the patients become reſtleſs, frequently cannot ſleep, they complain of pain, and ſometimes alſo of itching, in the puſtules, and, if they ever enjoy ſleep, they ſoon ſtart out of it, mutter, and even become delirious. In general, all theſe ſymptoms are allayed, merely by diluent, ſubacid, and correcting remedies, and more ſpare diet. If, however, the watching, reſtleſſneſs, and complaining of the patients, appear greater than uſual, they receive certain benefit from paregorics adminiſtered with caution; and, in general, the various preparations of white poppy anſwer the purpoſe. There is ſeldom occaſion for more powerful ones. Sometimes ſuch is the violence of the ſuppuration, when the ſmall-pox are very thick, and there is abundance of good and fibrous blood, that a more acute fever ariſes, attended with a ſtrong, hard, great pulſe, exceſſive heat, perpetual delirium, and the greateſt reſtleſſneſs, or difficult reſpiration, or ſevere inflammation of the fauces. In that caſe, beſides the antiphlogiſtic remedies, the cold regimen, and the admiſſion of pure air, blood may be advantageouſly drawn *; nor will the ſuppuration and maturation of the ſmall-pox be injured by it, if only ſo much is taken as may check the exceſſive inflammation, and diminiſh the fulneſs of the veſſels, without weakening the

patient too much. Well-eſtabliſhed inſtances of this kind have again and again occurred in practice. When the belly is very coſtive, it will not be without advantage to relax it with a gentle cathartic, or at leaſt to open it with injections. If the pain and tenſion of the ſkin are particularly ſevere in any part, the part may be fomented with tepid milk and water, by which it is not only ſoftened, and the pain mitigated, but the ſuppuration itſelf proceeds more ſucceſsfully. When the itching is very uneaſy, it is of ſervice to rub the part gently with ſome green plant, as mallows, pepper-minth, rue, or the like; taking care at the ſame time to confine the patient's hands in ſuch a manner that he may not tear the ſkin with ſcratching himſelf too much.

* Every body muſt know, that blood may be let at any period of the diſeaſe, if real inflammatory ſymptoms appear. Tiſſot, who, I have already obſerved, is otherwiſe extremely cautious about bleeding, thinks it ought to be done as often as real inflammation is ſuſpected to be preſent, even after a full eruption taking place (*Ep. Var. Arg.* p. 38.). Freind (*Epiſt. de Purg. in Secund. Var. Conſl. Febr. Adhibend.* Hiſt. 2.) mentions three powerful monarchs having been ſaved by bleeding during ſmall-pox, much about the ſame time; namely, Charles II. of Spain, Louis XIV. of France, and Charles II. of England. De Haën alſo experienced its utility, not only at every period of ſmall-pox, but even after the puſtules had dried and fallen off. *Rat. Cont.* T. i. c. v. § vii. n. 7.

255. But, after the puſtules have become ripe and filled with pus, nothing is more ſerviceable for allaying the pain, and preventing the abſorp-

tion of pus and the formation of pits,—which are generally caufed by the acrimony of the pus,—than the opening of the puſtules themſelves *, which was not only cuſtomary among the Arabians, but the propriety of which has been repeatedly confirmed in later times by the general experience of phyſicians †. But the puſtules, when they are full of pus, are opened either with a needle or a pair of ſciſſars, the pus is expreſſed, and the puſtules afterwards wiped with a ſpunge dipped in tepid milk and water; and this is repeated as often as they appear to fill again ‡. After thus opening them, others waſh them with wine, water, and honey ‖, which is attended with moſt advantage when great fetor, a livid or black colour of the ſkin, and the thinneſs of the matter, give reaſon to apprehend a great tendency to putrefaction. In which caſe, likewiſe, ſome add to the wine a little of ſome aromatic §. After wiping the puſtules in the manner that may appear beſt, particularly if the cuticle has been opened with a pair of ſciſſars,—as is ſometimes neceſſary to draw out all the pus,—I have frequently found the greateſt advantage from coating them with the freſheſt oil of the yolks of eggs gently roaſted, which mitigates the pain of the ulcer, blunts the acrimony of the fluid, prevents the bad effects of the external air, and promotes the healing of the ſkin. But opening them in

this manner is not only proper when the puſtules, are full of good-conditioned pus, but in thoſe alſo which contain ſanies, or a thin fluid, and are very apt to become depreſſed. For, by drawing out the variolous matter by an inciſion, the worſt kinds of metaſtaſes are prevented, and a great part of that fomes is removed, by the ſtriking in of which the ſecondary fever would be aggravated.

* Tiſſot, *Ep. Var. Arg.* p. 42. 43. † We are informed by De Haën, that upwards of two centuries ago Marquard, a profeſſor in Vienna, and afterwards Raym. Jo. Fortis of Padua, and the French and Italians long ago, employed this mode of opening the puſtules with ſucceſs (*Rat. Cont.* T. 1. c. v. § vii. n. 6.). Azzoguidi (*Lett. citat.* p. xlii.) recommended it, after its uſe had been reſtored by Holland, and being employed by Senac, Tiſſot, De Haën, Home, and others. To theſe names muſt be added that of Sidobre (*De Var.*), and Wintringham (*Com. Noſol.*), (See *Edin. Med. Eſſays*, T. 2.), and not a few beſides; among whom we muſt not omit the name of Varnier (*Journ. de Med.* T. v. p. 152. *Août.* 1756.), who, as he frequently had obſerved that gangrene and putrefaction occurred in corpulent patients labouring under confluent ſmall-pox, not only employed the more powerful antiſeptics, but adviſed the opening of the puſtules when ripe, and waſhing the whole body with aromatic wine. For my own part, I have very frequently opened ripe and full puſtules, as well as ſuch as had begun to be depreſſed; and ſo far from having ever known any bad conſequence ariſe from it, I have often obſerved the higheſt benefit produced by it. We need not, therefore, attend to Diemerbroeck and a very few others, who reject the opening of the puſtules; far leſs is Ludwig to be liſtened to, who, although he has reprobated it (*Adverſ. Med. Pract.* V. 1. P. 3. p. 473.), elſewhere (*Inſt. Med. Clin.*

P. 1. c. 1. § cciv.) thinks it better to open the malignant and confluent kind, to procure a paſſage for the pus. ‡ Quarin, *Meth. Med. Febr.* c. viii. p. 99. ‖ Azzoguidi, l. c. § Varnier, l. c.

256. Such (254. 255.) are the precautions uſually adopted in treating the ſuppuration of the ſmall-pox, which follows according to the laws of nature. But when the ſmall-pox are malignant and anomalous, eſpecially in the confluent ſpecies, or that which approaches to it, they occaſion more trouble. For they frequently do not ſuppurate at all, or with great difficulty (180. 181. 182. 183. 202.); or during the ſuppuration ſuddenly become depreſſed, and in conſequence of the pus retiring in, become empty (183.); or thoſe which were already depreſſed and livid on the margins, in this ſtage only become white on the tops, being almoſt void of any fluid (282. 299.); or they remain completely depreſſed, as formerly, nor are they ever raiſed, but aſſume a dark colour (189.); or the puſtules being flaccid, low, and without any red circle, and the ſurrounding ſkin being pale and lax, the whole face is marked with a leadiſh white colour (194. 195. 196.); or, the ſuppuration being defective, the puſtules without ripening terminate in a dry cruſt, at firſt ſanguineous, then black (*ibid.*); or they become livid and ſlightly bloody in appearance, and, pouring out blood, quickly become black and gangrenous (197. 198.). When

theſe things occur, the patient is threatened with the moſt dangerous ſymptoms, as phrenitis, angina, ſuffocation, peripneumony, convulſions, ſtrangury, hæmaturia, and other moſt fatal ſymptoms *, nay, frequently with ſudden death itſelf.

* Moſt of theſe ſymptoms, it is ſaid by the followers of Sydenham, may be either intirely prevented, or rendered much milder, by the patient's remaining out of bed, by moderate walking in the open air, and by continuing awake in the day-time. And they affirm, that while the ſuppuration is going on, no danger is to be apprehended from the pure air being employed, as both the ſuppuration and exſiccation of the puſtules go on better in the open air, provided it be of a moderate temperature, even in thoſe patients who, during the ſuppuratory fever, have a ptyaliſm and difficult deglutition; for they affirm that they are rather relieved, and the ptyaliſm kept up by it (See Störck, l. c. p. 272. 273. 274.). And, with regard to remaining out of bed, Tiſſot thinks it chiefly neceſſary in a ſtate of violent inflammation of the puſtules. For its effects are ſaid to be, 1. diminution of the fever; 2. more eaſy reſpiration; 3. relief to the head; 4. cooling the loins; 5. the diſſipation of the putrid effluvia; 6. the advantages derived from a conſtant renewal of the air, whether the patient ſits in a large open room, or walks about moderately (*Ep. Var. Arg.* p. 39.). They grant, however (Störck, l. c. p. 274.), that ſudden cold ſhould be avoided, as well as too windy cold air. And although we allow that the pus, which is generated in the benign and ripe puſtules, from its thickneſs is not apt to retire in conſequence of the cold air, that cannot be affirmed with equal truth of the ichor and thin ſerous fluid, which is generally collected in the benign confluent ſmall-pox, and the ſpecies which is ſlow of ſuppurating. For it ſeems probable enough, that on any ſlight occaſion it is abſorbed and forced in from the admiſſion of cold or pure air. Harvey, of whom mention has already been made, gives the hiſtory of a variolous patient,

whom he ordered to be bled before the eruption, on account of a catarrh and ſore throat with which he was affected. But, on account of its having been neglected, the patient, by his apothecary's advice, having done many things that only otherwiſe healthy people would have been allowed to do, walking in the open air, although the ſmall-pox were confluent, and had ſuppurated; in conſequence of his omiſſion loſt his life (V. *Art. Cur. Morb. Expect.* p. 159.). Nor are the diſtinct and benign ſmall-pox altogether inſured againſt ſuch an accident happening. I remember of a young lady of diſtinction having been ſo affected, in conſequence of the window being raſhly thrown open during the preſence of the ſuppuration, though the complaint was very mild, that ſhortly after a metaſtaſis having taken place to the brain, ſhe was ſuddenly ſeized with a fatal epilepſy. I have likewiſe ſeen a boy, who, when affected with the diſtinct ſmall-pox, though few in number, notwithſtanding that, during the whole courſe of the diſeaſe, he ſcarcely ſeemed to be unwell, and therefore conſtantly ſat up in bed, very ſlightly covered; at length, in conſequence of the puſtules drying up too ſoon, was ſeized with cynanche laryngea, which, if bleeding had not been quickly employed, would probably have proved fatal. During the ſuppuration, therefore, the patients ought not to be expoſed to the open cold air, without great caution; and as the renewal of the air and ventilating of the apartment are neceſſary, the rules already down on that ſubject ought to be obſerved.

257. In particular, however, to theſe ſymptoms (256.) is added a violent fever, or that which is already preſent becomes greatly aggravated, obſerving the type of a continued remittent, very dangerous, and is commonly called *ſecondary*, which, if it does not quickly prove fatal, continues long, and exceeds the period of ſuppuration (201.), differing greatly, if I miſtake

not, from the fever of ſhort continuance, quickly diſappearing after the ſuppuration, as being the offſpring merely of the ſuppuration (254.), which Sydenham therefore called putrid, employing the term, as I imagine, in the ſenſe of the ancients. It ſeems proper, therefore, to diſtinguiſh it from the ſuppuratory fever, which follows the maturation of the puſtules, becauſe it is excited by the puſtules not ſuppurating at all, or with difficulty, and imperfectly. It appears, therefore, highly probable that it ariſes from the variolous matter being retained in the blood, or from the diſpoſition of all the fluids, particularly of the fat, being vitiated by the variolous virus, and aſſimilated to it, or from the ichor of the puſtules being abſorbed, or, as is not unfrequently the caſe, from internal inflammation, or from all or moſt of theſe cauſes combined. Hence it muſt appear evident to every body, that all manner of care ſhould be taken (256. 257.) to draw all the variolous matter to the ſurface, and, as far as poſſible, to promote its being converted into laudable pus by ſuppuration; or, if that cannot be done, to immediately cauſe its expulſion by ſome other paſſage. Which is generally attempted to be done by gentle, tonic, antiſeptic cordials, and by all kinds of evacuation and revulſion, concerning which we have already ſpoken, and ſhall ſtill have occaſion to ſpeak hereafter.

258. But it muſt be remembered, in particular, that nearly the ſame remedies are neceſſary to fill and ſupport the ſmall-pox, or to promote their ſuppuration, as thoſe by which I have already ſhewn (145. to 149.) that the eruption itſelf is aſſiſted, or the depreſſion of the puſtules corrected, providing proper attention be paid to the remarks and cautions laid down there *. They may be, therefore, applied here. But it can ſcarcely be conceived how much ſome men of the greateſt learning, after the example of Sydenham, truſt to narcotics and opiates in this ſtage. For if, as moſt frequently happens in the malignant ſmall-pox on the eighth or ninth day, the puſtules become depreſſed or brown, or black, while the reſt of the ſkin becomes flaccid and livid, attended with a very languid pulſe, ſometimes coldneſs, ſometimes heat of the extremities, paleneſs and redneſs of the face ſucceeding each other, and, laſtly, ſpaſmodic affections of ſome parts;—then, beſides the other remedies elſewhere recommended, they have no heſitation in reſting all their hopes on the copious and frequent uſe of opium, or other narcotics, as I have already hinted.

* But I did not adduce all the precautions there. It is neceſſary to add one of the higheſt utility from Sydenham. He remarks, that the depreſſion of the puſtules in the confluent ſmall-pox ought not always to be aſcribed to external cauſes, or cold, as there is nothing in it which does not proceed from the nature of the diſeaſe; and no bad conſequence, therefore,

ariſes from it when it obſerves the uſual progreſs. The natural flatneſs and depreſſion, therefore, muſt not be miſtaken for the ſubſiding or ſtriking in of the variolous matter. In the diſtinct kind, again, the practitioner muſt be on his guard againſt expecting the eruption, or increaſe of the puſtules, before the proper time, but ought to attend to the time when nature ought to bring it about. Sydenh. *Op.* ſect. 2. c. 2. p. 179. 180.

259. Hence ſome of them adviſe every fifth or ſixth hour giving eight or ten drops of laudanum (to adults I ſuppoſe), or, when they do not wiſh to act ſo decidedly, every two, three, or four hours, two ſpoonfuls of ſome paregoric and cordial mixture, containing ſeven ounces of the water of teil-flowers, an ounce and a half of ſyrup of diacodium, to which they occaſionally add ſome vitriolic acid, in ſuch quantity as to produce an agreeable degree of acidity, in order to allay the heat of the blood, and check its diſſolution. They likewiſe employ this mixture boldly, if, during the time of the ſuppuration, the patients be anxious and reſtleſs, or feel exquiſite pain, and if there be unuſual heat of the blood; provided the pulſe be ſoft and free of all hardneſs or tenſion. For by means of it they aſſert that the ſtrength is quickly improved, the puſtules raiſed, become red, and ſuppurate, the bad ſymptoms are mitigated, and the danger which is threatened averted. But, on obtaining the effect deſired, they very carefully adviſe laying aſide theſe paregorics in the day-time, adminiſtering

them in the evening only, that a tranquil night may follow *. Others, however, conduct themſelves with more caution in the employment of opium. Tiſſot, who almoſt intirely rejected narcotics in the two firſt ſtages of the complaint, thought them of no greater efficacy in the third, in which the ſuppuration and ſecondary fever occur †. For he remarks, that then, in particular, lethargy, coma, and orthopnœa, diſtreſs the patient, in conſequence of a metaſtaſis of the variolous matter and congeſtion of the fluids, and that ſuch direful ſymptoms muſt evidently be increaſed by employing narcotics, while all the excretions, which are then highly neceſſary, are checked, to the patient's great hazard. Nay, that there is reaſon to apprehend, that the anxiety, delirium, heat, and thirſt, already very troubleſome, are increaſed by them, or that phrenitis, peripneumony, hepatitis, iſchuria, gangrene of the inteſtines, and other fatal complaints, are induced. Meade himſelf ‡, as the diſeaſe draws to an end, if dyſpnœa comes on, and the fauces are filled with viſcid phlegm threatening ſuffocation, which frequently happens, on the ptyaliſm ceaſing, intirely rejects the uſe of opium as hurtful. From this variety of opinion, however, let no one infer that he is at liberty to chuſe which he may, or embrace one in preference to the other without deliberation; ſince it appears intirely conſiſtent with reaſon (as I have already ſhewn) to ſuppoſe,

that the employment of opium at one time will be highly ſalutary, at another hurtful, according as the vital powers are to be rouſed, or exceſſive ſenſibility allayed, or a diſordered ſtate of the nervous ſyſtem checked. In both caſes, however, moderation muſt be obſerved, and care ſhould be taken not to exceed bounds either in employing or rejecting opium, while all the particulars ‖ ought to be deliberately conſidered.

* Störck, l. c. P. I. p. 287. † L. c. p. 17. ‡ *De Var.* c. 3.

‖ Although Tiſſot ſeems frequently to condemn the uſe of opium in ſmall-pox, yet he declares that he is not ſo averſe to it as at all times to object to employing it. He with good reaſon contends, that its employment ought to be limited, and points out, with ſufficient preciſion, when it is preferable to abſtain from narcotics, and when they may be uſed without riſk. It will not, therefore, be ſuperfluous to enumerate the caſes in which,—according to this author,—it is by no means improper to have recourſe to narcotics; and theſe are, 1. when debility is preſent, requiring cordials, and when it is neceſſary to draw the variolous matter from the internal parts to the ſurface (as in the firſt ſtage of ſmall-pox), while the pulſe is weak and irregular, and the patient cold, and inclined to faint; 2. when ſpaſms, ariſing from exceſſive mobility, require being allayed; 3. when the puſtules are attended with intolerable pain; 4. when the fluids, during the eruption, paſs to the inteſtines, and the exceſſive looſeneſs threatens the exhauſtion of the ſtrength; 5. in the caſe of a colliquative diarrhœa, attended with fainting and coldneſs of the extremities; 6. when a diarrhœa comes on during the exſiccation, if it be exceſſive, if it exhauſt the ſtrength, render the puſtules pale, and deprive them of their fluid, occaſioning ſyncope, or delirium, and coldneſs of the extremities; 7. when colic-pains, towards the end of the diſeaſe, ſucceed to the long-continued and liberal

uſe of acids; 8. after adminiſtering a cathartic in the laſt ſtage. Tiſſot, l. c. p. 22. to 26.

260. But nature herſelf endeavours to ſupply the place of the imperfect ripening or depreſſion of the puſtules, by the ptyaliſm in adults, and the diarrhœa in children, as I have already ſhewn. We muſt, therefore, endeavour by all means to keep up the flow of ſaliva, as far as poſſible, which is beſt done by the liberal uſe of tepid, diluent drink, with the addition of honey. But if it is ſo viſcid and tenacious, as to be rejected from the fauces and mouth with the utmoſt difficulty, endangering ſuffocation,—which not unfrequently happens about the eleventh day, —it ought to be attenuated by means of a gargle of the water of elder-flowers, or a decoction of figs and liquorice-root, with the addition of a little honey of roſes, or ſimple oxymel, or ſyrup of mulberries. But if the patient cannot gargle his throat, or is averſe to it, or if it does not anſwer the purpoſe, the ſame remedies may be frequently injected, both day and night, into the mouth and throat, by means of a ſyringe *, notwithſtanding of the objection of others to this practice. Sydenham † propoſes a gargle compoſed of ſmall-beer, or barley-water, or one made as follows:—℞ Cort. ulmi drach. 6. glycyr. unc. ſem. paſſular. enucleat. xx. roſar. rubr. pugn. duos. Coq. s. q. aq. ad lib. un. et ſem. Col. diſſolv.

oxymel. ſimp. et mellis roſar. ana unc. duas. *M.* f. garg. But when the patient is threatened with ſuffocation, he adviſes the exhibition of an emetic, than which nothing is found more efficacious ſometimes, although he confeſſes that it does not always anſwer the purpoſe. But the ſaliva is ſometimes extremely acrid, in conſequence of which the inſide of the mouth is ulcerated, and becomes very painful, as if it had been burnt. It muſt then be gargled with barley-water and milk, or a decoction of marſh-mallow root, or a ſimilar demulcent fluid, to which may be advantageouſly added, ſome *ſedum majus* ‡, or mucilage of flea-wort ſeeds, or quinces. The ſmall ulcers may be treated with the remedies already mentioned when I ſpoke of the aphthæ ‖. But as the prolonging of the ptyaliſm in adults is highly neceſſary, it is likewiſe proper to allow the diarrhœa, which attacks children, to go on as long as the ſtrength will permit; nay, if it be accidentally ſtopped, it ought to be excited anew with bland injections; nor ſhould it ever be checked in this ſtage, unleſs it be exceſſive and exhauſt the ſtrength. On the whole, if the acrid humour deſcending to the inteſtines corrodes them, and gives riſe to gripes, as ſometimes happens when dyſentery prevails epidemically,—for then only the ſmall-pox are combined with dyſentery, —we may have recourſe to demulcents, and the

other remedies employed in treating the latter diſeaſe.

* Sydenh. *Op. Omn.* ſect. 2. c. 2. p. 177. Tiſſot, *Ep. Cit.* p. 42. Störck, l. c. P. I. p. 274. † L. c. *ib.* p. 177. 178. ‡ Störck, l. c. || Vol. i. § ccxcvi.

261. In the mean time, ſometimes the mouth and fauces are covered with a hard and thick cruſt of the variolous puſtules, by which the reſpiration and deglutition are greatly impeded. In that caſe they ought to be conſtantly fomented with emollient remedies, as tepid water mixed with milk, to cauſe the ſeparation of the cruſt. The noſtrils likewiſe are often obſtructed from the ſame cauſe. When that happens, the vapours of warm water may be drawn in by the noſe or mouth, or water with honey may be injected into the noſtrils by means of a ſiphon or ſyringe, by which the cruſts, being ſoftened, are ſeparated, and the patient receives the greateſt relief*. Sometimes, alſo, in the malignant and confluent ſmall-pox, when the puſtules ought to ripen, the face becomes black, and covered with a dry cruſt, which is truly gangrenous (195.). In that caſe the ſkin ought to be ſcarified repeatedly and deeply, even to the ſound fleſh, and afterwards fomented with a warm emollient decoction, containing ſpirits of wine and camphor. After this a great deal of fetid pus generally flows from the inciſions, and the mortified parts ſeparate. When the digeſtion

of the gangrene is completed, a cathartic ought to be adminiſtered. Meade † records an inſtance of a ſucceſsful cure of this kind; and I myſelf have been informed of another, by Guattani, a ſurgeon of conſiderable eminence in Rome, who, when a boy, laboured under a very dangerous gangrenous ſpecies of ſmall-pox, and was cured in conſequence of his father having employed a ſimilar method of treatment, which cauſed his face afterwards to be marked with very diſagreeable ſcars, affording a remarkable proof of his father's boldneſs, and the ſucceſs of the plan he had adopted. And if gangrene occurs in any other part, it ought to be treated in the ſame manner.

* Sydenh. *Op.* ſect. 3. p. 177. Tiſſot, l. c. *ib.* Störck, l. c. p. 275. † L. c. c. 3.

262. Very frequently in this ſtage, the face, hands, and feet, become too ſwelled, tenſe, painful, and red. The remedies are, fomentations of water and milk, or very emollient cataplaſms. For, by means of them, not only are the pain and tenſion mitigated, but likewiſe the ſuppuration of the puſtules is facilitated *. But the beſt practitioners agree in turning their attention in this ſtage particularly to the ſecondary fever and its ſymptoms. Sydenham was of opinion that it ought to be powerfully oppoſed by immediate and copious bleeding and purging alternately, in ſuch a manner, however, that he employed the purging only after bleeding, and not

before the thirteenth day of the diſeaſe. In both ways he propoſed to himſelf diminiſhing the inflammatory diſpoſition of the blood and quantity of the purulent matter †. But Sydenham's rule muſt not be adopted without caution. For it is not always, nor in every ſecondary fever, ſafe to bleed or purge; nor is it always neceſſary for the bleeding to precede the purging, when the latter is employed; nor ought we always to wait for the thirteenth day before purging, as it may be neceſſary even before this period, and ſometimes even on the ninth or tenth day ‡. But I ſhall immediately proceed to ſtate my ſentiments concerning each kind of evacuation, and ſhew when I think both, or one or other, ought to be allowed, and when not.

* Störck, l. c. † *De Febr. Putr. Var. Conſt. Superv.*
‡ Freind, *De Febr.* comm. vii. and Meade, l. c. c. 3.

263. To begin, therefore, with bleeding; we muſt carefully inquire whether the ſymptoms indicate the ſmall-pox of the inflammatory kind; or if the fever is very violent, accompanied with a ſtrong, hard pulſe, great heat and thirſt; whether the patient be of a ſtout habit of body, young, and accuſtomed to exerciſe; whether he has been addicted to heating meat and drink, or has employed a warm regimen; or if bleeding has been neglected at the beginning: it will then be proper to let blood, eſpecially if it be in-

dicated by ſevere ſymptoms, as phrenitis, coma, convulſions, ſuffocation, and peripneumony. Nor is the phyſician to be deterred from it, if it be indicated in other reſpects, by the ſmallneſs or weakneſs of the pulſe, becauſe the arteries then ſubſide, not in conſequence of want of ſtrength, but from being oppreſſed, and, on the ſuperfluous quantity of blood being removed, generally riſe again and beat with greater violence. It muſt alſo be remarked, that during the prevalence of an inflammatory diatheſis of the blood, the internal parts are frequently affected with inflammation, in conſequence of which the ſecondary fever ariſes, without the ſmall-pox being depreſſed; which is a proof that it does not ariſe from depreſſion of the puſtules, or abſorption of the pus,—as the ſmall-pox are raiſed and filled with laudable pus,—but from inflammation of ſome of the viſcera. In this caſe, alſo, the greateſt advantage is to be derived from ſpeedy and copious bleeding. On the other hand, when the ſymptoms peculiar to the nervous or malignant fever occur (211.), or, which is worſe, when ſymptoms of putrid diſſolution appear (212.), as in the malignant confluent ſmall-pox, and in ſome ſpecies of the diſtinct but gangrenous kind, of a bad diſpoſition, eſpecially when epidemic, it is abſolutely proper to abſtain from bleeding, although the ſecondary fever be pretty violent. For the

experiments of Sagar * likewiſe evince its hurtfulneſs in theſe caſes.

* *De Var. Iglavien.* p. 44. 45.

264. It remains for me next to ſpeak of the employment of cathartics in the ſecondary fever. Moſt authors, after Sydenham, Freind, Meade, Huxham, and others, are of opinion that it ought not only to be removed, but prevented by them. Nay, they affirm *, that ſometimes relief has been obtained from no other medicine, eſpecially when, in certain caſes, calomel and paregorics are interpoſed at the proper time. Tiſſot—not only in the confluent ſmall-pox, at the commencement of the ſecondary fever, but alſo in the diſtinct ones, when copious,—recommends the adminiſtering of manna in ſuch a doſe as to produce three, four, or five ſtools, which is generally ſerviceable on the ninth or tenth day, and propoſes continuing its uſe even for ſome days after. So much does he rely on this medicine. Nor does he do ſo without reaſon; for the intimate conſent between the ſkin and inteſtines is well known, which led Hippocrates to obſerve, *Cutis laxitas alvi adſtrictio, et vice verſa:* or that the excretions of theſe parts alternate together.

* Huxh. *De Aëre, et Morb. Epid.* T. i. p. 37.

265. But purging muſt not be employed indiſcriminately; for, like bleeding, it alſo has certain bounds beyond which it is improper to go.

It almoſt invariably holds, that in the ſecondary fever, which comes on without any ſuppuration of the puſtules, or when thoſe on the face in particular dry prematurely, and the ſwelling at the ſame time diſappears, purging * is commonly conſidered as neceſſary, and ſtill more if, in conſequence of the variolous matter remaining in the ſyſtem, an ardent fever ariſes, accompanied with reſtleſſneſs, ſhort and frequent reſpiration, thin urine, and conſtant watching. In that caſe, after bleeding, if it has been properly indicated (264.), gentle cathartics, repeated at intervals, ſucceſsfully draw off the variolous colluvies †. But it is likewiſe highly ſerviceable after the puſtules have undergone proper ſuppuration, and are filled with pus, although none of the pus paſſes out of the puſtules, or along with the urine, and no ſediment is obſerved in it ‡; or, laſtly, if the puſtules have fallen of a ſudden, and the pus has retired into the ſyſtem. There is likewiſe need of purging, if, on the ptyaliſm ceaſing, and the ſwelling of the face ſubſiding, the ſwelling of the extremities does not come on, and there is no diſcharge of urine depoſiting a ſediment, nor ſpontaneous looſeneſs; or, which is worſe, if coma, or delirium, or both ſupervene ‖. But on delirium, coma, angina, or peripneumony ſupervening, purging is ſo proper, that we ought not to be deterred from it by the fear of the ptyaliſm being ſtopt by it; as in that caſe Tiſſot § is of

opinion, that more immediate advantage is to be expected from the looſeneſs, than danger from the ſuppreſſion of the ptyaliſm, which does not then afford ſufficient relief; particularly if bleeding or cupping-glaſſes have already been employed, and with no effect ¶. Nor does lowneſs of the pulſe always hinder the employment of bleeding; as it is frequently raiſed, and becomes ſtronger in conſequence of bleeding **. It is likewiſe aſcertained by experience, that the looſeneſs is attended with advantage when the very acrid humour, with which the puſtules when drying abounded, might induce gangrene of the ſkin ††.

* Meade, l. c. c. 3. † Saliſbury Cade, *Epiſt. ad* Freind. ‡ Freind, *De Purg. in ſecund. Var. Conſt. Febr. adhib. ad* Rich. Meade. || *Id.* l. c. hiſt. 3. § Tiſſot, *Ep. Var. Arg.* p. 46. ¶ Freind, l. c. hiſt. 2. ** Freind, *De Febr.* c. vii. †† *Idem*, *De Purg. &c.* hiſt. 3.

266. On the other hand, it is more adviſable to abſtain from purging, while the ſwelling of the face and inflammation of the puſtules continue, and the ſaliva flows properly, without being accompanied with any other more ſevere ſymptom *. But if the ſwelling of the face begins to ſubſide, and the ptyaliſm is leſſened, as happens in the confluent ſmall-pox on the ninth, tenth, or eleventh day of the eruption, and at the ſame time the hands ſwell properly, and no ſymptoms of a worſe kind appear, the whole buſineſs may be intruſted to nature †; or it will be ſufficient in

the mean time merely to keep the belly open with clyſters, if it happens to be bound. The cathartics alſo ought to be omitted, if there is a ſpontaneous diarrhœa, or if the bowels have already been purged by means of injections, or at leaſt they may be deferred for ſome days, that the ſtrength may not be altogether exhauſted ‡; and ſtill more if the belly is ſo looſe as to endanger the inducing of debility, which generally happens in a putrid diſſolution, chiefly of all the fluids, ſo frequently the concomitant of the malignant ſmall-pox.

* Saliſbury, *Ep. Cit.* † *Id. ib.* ‡ Meade, *De Var.* c. 3.

267. It is not ſufficient, however, to inquire whether bleeding, or purging, or both, ought to be employed in the ſecondary fever. It is likewiſe proper to aſcertain whether the variolous ſanies is collected in any part under the dry cuticle. This is eaſily known by the touch, or by the epidermis burſting; for on preſſure, or on an inciſion being made, pus is diſcharged. Then a paſſage ought to be ſpeedily made for the pus, and the body ſhould be nouriſhed with proper diet, and antiſeptics employed, that the patient may bear up under the diſeaſe, until the whole purulent matter has paſſed out, which Meade has ſometimes obſerved to flow for twenty days, or even more, without affecting the patient's ſtrength. While the purulent matter, in conſequence of the cuticle cracking, continues to flow out from the ſkin, and in this manner evacuates the ſyſtem, the

practitioner ought to act with caution, and neither by bleeding nor purging interrupt that salutary evacuation. In the mean time, in the third and following stage of the complaint, the whole skin ought to be kept clean of the pus and putrid halitus, by frequently changing the bedcloaths and linen, and carefully ventilating the room *. I shall not here omit to mention, that sometimes towards the end of the suppuration, or beginning of the exsiccation, most dreadful pains in the bones come on (as I have already mentioned on Sagar's authority), which, if they exceed twelve, or twenty-four hours, occasion certain death. They ought to be alleviated with anodyne fomentations of tepid milk, with drinking an infusion of teil-flowers, and wild poppy, and also with syrup of diacodium in the water of teil-flowers; experience having shewn the advantage of employing these remedies †.

* Tissot, *Ep. Cit.* p. 40. † Sagar, *De Var. Iglav.* p. 19.

268. It was proper to make these general remarks when treating of this stage of the complaint. It remains for me now, according to the plan I have laid down to myself, to subjoin some particular observations concerning the cure of certain species of the complaint. Sydenham used to cure the *anomalous confluent small-pox*, which I have already (195.) described after him, in the following manner. As he discovered in this species of the complaint, excessive heat of the blood, and a kind of burning acrimony occasioning col-

liquation and corruption of almoſt all the fluids; he thought that it required being checked in the moſt deciſive manner. Beſides narcotics, therefore, which are uſually employed in other ſpecies of confluent ſmall-pox, he had recourſe to the *cooling regimen*, and the liberal drinking, not of calefacient drinks, but of thoſe which at once allay the moſt violent heat. With that view he recommended the *decoctum album*, which is compoſed of bread, and a ſmall quantity of burnt hartſhorn, mixed with a great quantity of water, and ſlightly ſweetened with ſugar. He alſo employed with the ſame view *hydrogala*, "conſiſting of three parts of water and one of milk boiled together, which generally proved more agreeable to the patient than refrigerant." Nor did the liberal uſe of drink prove ſerviceable merely by allaying the exceſſive heat, excited along with the fever during the time of maturation, but likewiſe by promoting and keeping up the ptyaliſm longer than would have happened, had not the heat been diminiſhed. It likewiſe afforded relief when an immoderate flow of the menſes came on, provided the depreſſion of the puſtules was not apprehended from ſuch a profuſe diſcharge, and heating remedies, which occaſion greater colliquation in the blood, were not improperly employed on that account.

* *Oper.* ſect. 3. c. 6. p. 231.

269. In the fatal malignant and confluent epi-

demy, in which the puſtules ſubſiding occaſioned death on the eighth or ninth day, and which was of a truly putrid kind (198.), as Haller obſerved that this ſymptom univerſally proved fatal, he began to conſider in what manner ſo great an evil might be averted. Acids and refrigerants, on account of the puſtules, as I have already obſerved, being very apt to become depreſſed, ſeemed to him to be of a doubtful nature. He found emulſions, clyſters, and cathartics, which other phyſicians employed with great confidence, quickly give riſe to palſy, aphonia, dropſy, or even ſudden death, in conſequence of the puſtules ſtriking in; nor did he find the employment of calefacients leſs pernicious. He mentions, that in it "there was preſent a high degree of alkaleſcence of the fluids, in conſequence of which both the puſtules and breath of the patients had a horrid ſmell. There were alſo preſent in the fluids a fatal lentor,—as was evinced by the ſpots, which are in fact ſmall ſphaceluſes,—together with pains of the loins, and ſcanty, greeniſh urine." A medicine was therefore required to diſſolve the impacted humours, without burſting the veſſels, to increaſe the motion to the ſurface, without aggravating the fever, and to raiſe the puſtules about retiring into the ſyſtem, without exciting the alkaleſcence preſent in the fluids. Camphor appeared to him to poſſeſs theſe properties. On which account, whenever ſymptoms prognoſticating ſmall-pox of a bad kind occurred, as "delirium on the firſt day,

violent fever, pungent pain in the loins or breaſt, difficult reſpiration, when the patient was corpulent, grown up, and plethoric, he immediately gave a diluent decoction liberally,—that is, to the extent of a few pounds daily,—made of aperient plants, as ſarſaparilla, the roots of graſs, adianthum, daiſy, or figs." He abſtained from bleeding, however, although at firſt ſight it might appear proper, becauſe perhaps the very great tendency to putrefaction, which he obſerved in the diſeaſe, made him conſider that remedy as hurtful. But he promoted " the vomiting, which was almoſt a conſtant ſymptom, by means of an emetic, ſo as to occaſion full vomiting at leaſt eight times." For if the vomiting was checked, the diſeaſe always terminated more unfavourably. But although he carefully guarded againſt bleeding, he found that the hemorrhages were not alarming, having learnt by experience that they were in ſome meaſure to be deſired; particularly as he obſerved in a boy of ſeven years of age an hemorrhage from the anus, before the appearance of the eruption, followed by a very mild diſeaſe.

* *Opuſc. Path.* obſ. xliv. *Hiſt. Conſt. Var.* an. 1735. p. 113.

270. But when, in conſequence of advice of the domeſtics, or through the fault of the patients themſelves, the ſmall-pox were haſtened by warm remedies, after great anxiety they appeared prematurely very black; but if they appeared ſpontaneouſly on the third day, and the

ſymptoms were relieved in conſequence, ſtill the puſtules fell on the ſixth day, and were marked with a black ſpot, as is uſual in the malignant confluent ſmall-pox. When either of theſe accidents befel the patient, he adminiſtered camphor diſſolved in ſome emulſion, ſo that twenty grains ſhould be taken within twelve hours. He began to employ it at midnight, after the fever had taken a turn, and continued it till next day at noon, dividing the intire doſe into ſix parts, ſo that one might be taken every hour. And at three, four, or at moſt five in the afternoon, he gave the ſyrup of white poppy, with nitre and a little pure citron-juice. To an adult, when violently affected, he gave an ounce and a half of the ſyrup, and ſix drachms of citron-juice. In this manner the delirium was allayed. He continued this plan of cure even until the drying of the puſtules. But as ſoon as he found the ptyaliſm in adults diminiſhed, and the throat become dry and ſore, which took place from the ninth to the tenth or eleventh day, at the ſame time the exſiccation of the puſtules coming on, during all this time he endeavoured to prevent the fatal angina, and to excite the ptyaliſm, by frequently injecting honey of roſes and nitre through a ſiphon into the throat, notwithſtanding that Hoffman, though unjuſtly, reprobates this practice. In the mean time he allowed diluents in abundance, together with acids and demulcents. But he gradually diminiſhed the quantity of the camphor, ſo that he omitted it

altogether on the ninth day, when nothing remained to be expelled, and the ſecondary fever was about taking place. Thus the black puſtules diſappeared about the eighth day, and " gradually became firſt red, and at length pale." At this period, likewiſe, he looſened the bowels by means of an injection with nitre, having learnt by experience, that a diarrhœa rendered the ſecondary fever of the eleventh and twelfth day milder, " while it would otherwiſe have become fatal, attended with a new delirium, anxiety, angina, ſoft, irregular, quick pulſe, and a moſt offenſive ſmell of the whole body." But if a more ſevere fever came on, he allayed it by giving a cathartic compoſed of tamarinds; nor did he omit doing this even in the higheſt degree of debility; nay, he repeated it on the twelfth and thirteenth day, if it was neceſſary. By theſe means he almoſt cut ſhort this dreadful complaint, as well as by preparations of poppy, and citron-juice, and other means adapted to the patient. But during all the ſtages of the diſeaſe he religiouſly abſtained from fleſh and ſoups of all kinds, giving only herbs and fruits, and always preſcribing the ſame drink, but in greater quantity, and more frequently.

271. It is ſurpriſing that Sydenham, who firſt of all employed the vitriolic acid * in the malignant and gangrenous ſmall-pox, mixed with the drink ſo as to render it agreeably acid, during

the whole firſt and ſecond ſtage of the complaint, during the ſuppuration and ſecondary fever, either reprobated, or, as I have already (268.) ſhewn, omitted it; and that Haller, in the very putrid kind of ſmall-pox juſt mentioned, conſidered it as ſuſpicious, or hurtful (269.), nay, in this ſtage, the cure of which I am at preſent diſcuſſing, almoſt abſtained even from the vegetable acids; ſince there is not in the whole Materia Medica a medicine more efficacious for checking the diſſolution of the blood, and preventing putrefaction. But the vitriolic acid is of ſingular efficacy in the hæmaturia, which is occaſioned in this ſtage of the complaint in particular by the extreme diſſolution of the blood; for if it yields to any remedy, the only hope remains in the liberal employment of the ſtrong acids. At the ſame time we muſt not omit thoſe remedies, which I have elſewhere mentioned (242.) as reſtraining ſuch hemorrhages, as the ſerum lactis aluminoſum †, as it is called, alum itſelf, and the ſpecific of Helvetius ‡, when other means have failed, and no congeſtion in the lungs or other viſcera forbids the employment of aſtringents. But the apprehenſion which is ſometimes entertained of ſuppreſſing the ptyaliſm, or reducing the ſtrength by means of theſe acids, is almoſt groundleſs ‖, if we are to believe the teſtimony of phyſicians who have experienced their

effects, and in the latter case do not neglect to combine the acids with cordials and slightly aromatic remedies, such as the virginian snake-root, and contrayerva, camphor, and particularly peruvian bark, which, on account of its antiseptic quality, can scarcely be omitted without injury in the putrid and gangrenous small-pox, or in those in which there is a tendency to corruption from any other cause.

* *Oper.* sect. v. c. iv. † The serum aluminosum of the London Pharmacopœia is made as follows: Rec. Lactis vaccini lib. i. alum. crud. in pulv. redact. drach. ij. Coque, ut fiat serum lactis probe a coagulo separandum. ‡ The specific of Helvetius is thus made: Rec. Alum. crud. pulv. unc. ii. Sang. dracon. in lachrym. unc. semis. Liquetur alumen ad ignem in vase argenteo, aut fictili vitreato; fuso insperge sang. drac. in pollin. tenuiss. redact. Frigefacta massa servetur in vase clauso ad usum. Dosis a drachma semis ad unam. || Tissot has spoken of the employment of acids in the cure of small-pox with so much judgment, that I think it will be of advantage to students to give the substance of his observations here. The vegetable acids were first employed by the Arabians, and have been since employed by their successors to the present day in the cure of small-pox. But no one before Sydenham's time ever employed the vitriolic acid mixed with the drink in the malignant and gangrenous small-pox; at the commencement of the suppuratory stage, however, and during the secondary fever, it seems to be rejected by him as hurtful. But improperly, according to Tissot; for acids resist putrefaction; diminish the heat, fever, and itching; prevent the colliquative diarrhœa, without producing costiveness; remove the angina, delirium, and phrenitis; check the malignity, and prevent the benign from degenerating into the malignant small-pox; do not suppress the ptyalism, excite the flow of urine,—espe-

cially the nitrous acid, when mixed with the drink in large quantity,—and obviate the metaſtaſis of the pus. They are particularly recommended in the hæmaturia, and black ſmall-pox, as alſo in alkaleſcence and warm diſſolution of the fluids (*Ep. Var. Arg.* p. 28. to 56.). The common doſe of the mineral acid, according to Quarin (*Meth. Med Febr* c. viii. p. 96.), is a drachm a-day: but there is ſometimes occaſion to increaſe it to half an ounce, or even to ſix drachms. He adds, that it may be given to infants, if they reject it in their drink, mixed with ſome ſyrup, and taken in ſpoonfuls. But Tiſſot mentions his having given it ſtill more liberally. For ſometimes within the ſpace of four hours he gave three drachms of ſpirit of vitriol, or ſulphur, diluted with a large quantity of drink, to allay the violence of the fever, delirium, and anxiety. At another time he gave a woman two whole ounces of the ſpirit of ſulphur in the ſpace of forty hours. He grants, however, that in conſequence of the long and liberal uſe of acids, towards the end of the diſeaſe colic-pains aroſe, which it is neceſſary to allay with opium (l. c. p. 23. to 25.). But altho' he be a very great friend to acids, he reprobates them in a vapid diatheſis of the blood, and laxity of the ſolids, unleſs the acids are combined with cordial remedies, as camphor, peruvian bark, virginian ſnake-root, the ſimple mixture, or the ſulphur auratum antimonii. But Farr (*De Acid. Virib.* p. 101.) differs ſomewhat from Tiſſot, as he obſerves, that acids ought not to be given when the circulation of the blood is too languid, nor when the ſolids are too rigid, and the fluids too ſluggiſh and denſe. In my opinion, however, all acids ought not to be underſtood here; for the vegetable ones, eſpecially the nitrous acid, when diluted, prove attenuant and diſſolving; nor is it inconſiſtent with truth to ſuppoſe, that the vitriolic acid alſo, whilſt it diminiſhes the irritability, and perhaps attenuates and attracts the earthy element and connecting gluten, may occaſion laxity of the fibres; and it is therefore improper to diſcard it when the ſolids appear too rigid.

272. I muſt likewiſe make ſome obſervations concerning the peculiar treatment of the *ſanguineous* ſpecies, as it is called (197.); but as in it the puſtules by no means ſuppurate, but become livid and ſomewhat bloody, being univerſally accompanied with black ſpots, vibices, and petechiæ, and the blood is very much diſſolved, giving riſe to various kinds of hemorrhages; it is evident that it is of a highly putrid nature, and requires the moſt powerful antiſeptics, inſpiſſating and ſtyptic remedies, particularly bark, preparations of vitriol, and alum. It is beſt, therefore, to adminiſter a drachm of bark, or four ſcruples, every four or ſix hours, and, in the interval, ſuch a doſe of alum as ſhall appear adapted to the patient's age and conſtitution; or the ſerum lactis aluminoſum, or the ſpecific of Helvetius, to the extent of a ſcruple, in conſerve of roſes, which is moſt efficacious. Great benefit, alſo, is derived from the vitriolated tincture of roſes, of which five or ſix ſpoonfuls taken occaſionally will be ſufficient for adults; nor is the red French wine without its praiſe, or any other ſubacid or auſtere remedy, the power of which alſo, in improving the ſtrength, is celebrated. But acids of all kinds, if in any caſe certainly in this, afford remarkable relief. Spirit of vitriol, therefore, even the very ſtrongeſt, is ſaid to be preferable to all others, eſpecially when dropped into the drink, and when black or livid ſpots are interſperſed among

the puſtules *. Nor muſt I here omit noticing the antiſeptic virtue of camphor, eſpecially when employed in conjunction with the vegetable acids. If delirium or coma come on in this ſpecies, Meade affirms, that bliſters alſo may be ſafely employed †, which will appear ſurpriſing to ſuch as with reaſon ſuſpect the efficacy of cantharides in ſuch a ſtate of diſſolution of the blood, and tendency to putrefaction. But ſometimes ſuch is the neceſſity for revulſion, that it requires the attention being wholly turned to it, although epiſpaſtics, and cataplaſms prepared with muſtard-ſeed, are then to be conſidered as ſafer.

* Meade, *De Var.* c. 3. † *Id. ib.*

273. Likewiſe in the *cryſtalline* ſmall-pox, and thoſe called *ſiliquoſæ* (183. 189.), which in their progreſs become flaccid and empty, frequently occaſioning ſudden death, unleſs ſome evacuation comes on; the watery fluid they at firſt contain is by no means converted into pus. It muſt therefore be partly diſſipated by the perſpiration, and partly derived to the urinary paſſages; which is effected by bland diaphoretics, cordials, and diuretics. Hence the bezoartic powders, powder of crabs claws, contrayerva-root, ſpiritus Mindereri, confection of kermes, and particularly the peruvian bark, fulfil the firſt and ſecond indication; but the third is anſwered chiefly by nitre, from a ſcruple to half a drachm three or four times a-day,

interpoſing it among the other remedies already mentioned. Some prefer diſſolving the nitre in weak wine, which, towards the end of the diſeaſe, they employ ſomewhat ſtronger to recruit the ſtrength. Likewiſe *ſp. nitri dulcis*, liquor terræ foliatæ tartari, ſyrup of marſh-mallows, and other ſuch remedies, prove very inciding, attenuant, and diuretic. Upon the fifth or ſixth day of the eruption, they order bliſters to be applied both to the loweſt vertebra of the neck, and to the arms and ankles, to draw the fomes of the diſeaſe, by which the fever may be aggravated, or the internal parts affected, to the ſurface. But if an aberration of the variolous matter takes place, and it does not paſs out by any natural or artificial opening, it is almoſt neceſſary, at this ſtage of the complaint alſo, to have recourſe to cathartics. Nor is a different plan of treatment required in the *variolæ verrucoſæ* (183.): for the thick matter in them muſt be digeſted and gradually evacuated. Hence it is generally neceſſary to employ alexipharmacs, cordials, ſudorifics, diuretics, and epiſpaſtics; and, laſtly, if theſe fail, cathartics. But the ſpecies of the complaint which is of an *intermediate nature* (202.), and undergoes ſuppuration difficultly or too ſlowly, requires the ſame method of treatment which has already been delivered in a general way. However, were I to treat particularly of every circumſtance belonging to the ſubject, I ſhould

exceed the bounds within which I muſt confine myſelf. Leaving the third ſtage, therefore, I ſhall haſten to the fourth or laſt.

* Meade, l. c. c. 3.

THE EXSICCATION.

274. WHEN the ſuppuration is finiſhed, and the fever, together with the other ſymptoms, begin to diſappear, which happens regularly in the diſtinct and benign ſmall-pox, the puſtules at length become yellow, and are quickly ſucceeded by dry cruſts. There is then ſcarcely any thing left for the phyſician to do; for the diſeaſe now terminates, and the former health is reſtored. Diluents, however, and ſubacids, ventilating the apartment, remaining out of bed, and the kind of diet already recommended, muſt by no means be neglected: for attending to theſe things occaſions a more ſucceſsful exſiccation of the puſtules. But if, as ſometimes happens, the puſtules in any part being full of pus are ſlow of drying, they ought to be opened, and the fluid expreſſed, as I have already obſerved; while the cruſts, if they continue too long, ought to be ſoftened with tepid lotions and fomentations, to promote their ſeparation and falling off. In the milder ſmall-pox, however, at the concluſion of the exſiccation, the more uſual practice is to employ ſome gentle cathartic, or to keep the belly

open with clyſters, repeating them every third or fourth day, for three or four times, and ſtill more on account of the ſecondary fever, during the ſuppuration, having been either intirely abſent, or very mild, it may be concluded with certainty that the belly was not purged. For if any of the variolous matter remains in the ſyſtem, or the pus has not been intirely diſcharged from the puſtules, it is ſuppoſed that it is removed by the purging. Nay, Tiſſot is of opinion, that we ought not to wait for the completion of the exſiccation, but employ the purging ſooner, that is, as ſoon as the puſtules on the face become yellow. For he alledges, that by timely purging we beſt prevent the bad conſequences which are frequently left by the ſmall-pox; and that at this time, while the matter is ſtill fluctuating, one purging is more ſerviceable than three or four employed later *. Let no one, however, infer from this, that it is in the power of the phyſician, and the medicines he employs, at pleaſure to ſeparate from the ſound fluids the remains of the diſeaſe, whether they adhere to the ſurface of the ſkin, or are diffuſed throughout the circulating maſs, and to direct them otherwiſe with moſt advantage. This only ſeems certain, that the ſordes collected during the whole courſe of the diſeaſe in the ſtomach and inteſtines, or carried thither gradually, may be advantageouſly and conveniently drawn off, while, if detained there longer, or flowing back into the blood, they

would occaſion new complaints. I do not deny, however, that ſometimes the vitiated and noxious fluids are ſhaken from the moſt internal parts of the body, and made to paſs to the inteſtines, from which they are ejected, to the great relief of the patient; but who can to a certainty inſure himſelf of ſuch an effect, ſo as to remove the whole danger by purging, or aſcertain that the bad effects which follow ought with juſtice to be aſcribed to omitting the purging? What if, in conſequence of the action of a cathartic, the variolous poiſon being made to retire from the ſurface, ſhould ſettle in ſome internal part, and give riſe to a fatal metaſtaſis? It is the buſineſs, therefore, of a ſkilful phyſician, to conduct himſelf with ſuch caution in adminiſtering cathartics, as to guard againſt any of the bad conſequences that are liable to follow their employment.

* *Epiſt. Citat.* p. 64.

275. But in the malignant confluent ſmall-pox, as the ſecondary fever, during the exſiccation, is generally prolonged, attended with very bad ſymptoms, we muſt continue the method of treatment already laid down (162. to 168.) at greater length; that is, if the fever is ſtill ſevere, and the breathing difficult, or any metaſtaſis is threatened, or the quantity of phlegm in the fauces threatens ſuffocation, while at the ſame time the belly is bound,—it ought then, not only to be relaxed with a clyſter, or whey, or a decoction of tama-

rinds, or cream of tartar, and kept open, but alſo, if it has not been done ſufficiently already, it ought to be pretty briſkly purged with ſyrup of ſenna, manna, and tartar, or lenitive electuary, or ſal polychreſt, or an infuſion of the leaves of ſenna, or the like, while at the ſame time we employ diluents, as the decoction of barley, of the roots of graſs, and marſh-mallows, with oxymel, nitre, rob of elder-berries taken copiouſly, to which may occaſionally be added ſome vitriolic acid *. Nor is it improper, if blood has not been drawn before, or not ſufficiently, and the heat is exceſſive, and the pulſe hard, while the ſtrength is not much exhauſted, to attempt bleeding, or even to repeat it †. Nay, ſome eminent phyſicians, on the twenty-firſt day, after the exſiccation is completed, when the complaint has been unuſually ſevere ‡, recommend both bleeding and purging. But both in bleeding and purging, we muſt always keep in view the remarks already made in the preceding paragraphs, exhibiting the arguments employed on both ſides of the queſtion, that nothing raſh or prejudicial to the patient may be done.

* Meade, l. c. c. 3. and Störck, l. c. p. 275. 276. † Meade, l. c. *ib.* ‡ Sydenh. *Oper.* ſect. 2. c. 2. p. 180.

276. But if, in the ſtage of the ſuppuration, on account of any ſevere ymptom,—as coma, delirium, convulſions, difficult, ſhort reſpiration, —revellents, epiſpaſtics, and particularly bliſters,

have been employed, the ulcers occaſioned by them ſhould be long kept open in this ſtage, that the whole variolous matter may be thus drawn off. This is neceſſary alſo, if during the exſiccation the arms or legs have been ulcerated, for ſimilar reaſons. I have elſewhere remarked (209.), that a cough ſupervenes in ſmall-pox, generally as an acceſſory ſymptom. When it happens at the beginning of the diſeaſe, it is generally catarrhal, or ſymptomatic of peripneumony. It muſt be treated juſt with the remedies calculated for removing catarrh *, or peripneumony (249. 254.). If, during the progreſs of the complaint, it ariſes from the puſtules beſetting the fauces and larynx, it ought to be allayed with diluents and demulcents, and mucous and oily mixtures (254.). But if it comes on towards the end of the diſeaſe, in conſequence of a metaſtaſis of the variolous matter, we muſt inquire whether the lungs are affected from a quantity of viſcid phlegm being accumulated in them, or are only irritated by a thin, acrid fluid. In the firſt caſe, a thick, viſcid expectoration comes off, affording remarkable relief to the dyſpnœa, oppreſſion and anxiety at the cheſt. The expectoration muſt be promoted with aperient, attenuant drink, with the addition of nitre and honey, or ſome linctus of manna, honey, and lintſeed-oil, or oil of almonds. When it is neceſſary to uſe more powerfully inciding remedies, and promote

the vomiting, this may be done by oxymel of ſquills, diaphoretic antimony, kermes mineral, very ſmall doſes of the *ſulphur auratum antimonii*, inhaling the vapours of vinegar, and the like †. In the other caſe, barley-water, milk and water, ſyrup of white poppy, mucilaginous and oily things, and the vapours of warm water, afford relief. Sometimes, both with the view of inciding and cauſing revulſion, it is proper in either caſe to employ bliſters,—not to mention bleeding,—if ſymptoms of peripneumony are preſent. And nearly the ſame remedies are generally employed in the orthopnœa ariſing from the above-mentioned cauſes.

* Vid. vol. i. p. 340. † Störck, l. c. p. 278. Tiſſot, l. c. p. 25. 37.

277. The drying of the puſtules, likewiſe, has been ſometimes ſucceeded by the ſalutary ptyaliſm, which generally ſupervenes only in the ſecond ſtage, and terminates in the third, as I have already remarked. It is proper, therefore, to ſupport and promote it with abundance of warm, diluent, ſweet drink, and to prevent this critical evacuation from being diſturbed by cathartics *, or narcotics, or ſudden cold. And it not unfrequently happens, as the ſuppuration is drawing to a cloſe, or the exſiccation beginning, nay, ſometimes after it is done, that tumours, like boils, take place under the ſkin in various parts, occaſioned by the variolous pus not being ſuffi-

ciently diſcharged from the puſtules. Theſe are ſaid to be prevented, as alſo the ſecondary ſmall-pox, which frequently ſucceed to thoſe which have firſt dried, by timely purging. But when ſuch tumours ariſe, we muſt obſerve whether they are ſoft, and the fluid contained in them appears thin and fluctuating. For in that caſe, like abſceſſes, they muſt be opened with all diſpatch, and digeſted for a long time, that the whole fluid may be made to paſs off in this way. But if they are hard, red, and painful, they muſt be brought to maturation by means of an emollient and anodyne cataplaſm of bread and milk, or ointment of marſh-mallows and butter, or ſimple diachylon, and at laſt opened with a lancet, as in the caſe of thoſe formerly noticed.

* Meade, l. c. c. 3.

278. Sometimes a part of the variolous matter is transferred to the joints, or to the bones themſelves, and excites in them the moſt excruciating pains, without any external ſwelling or redneſs being obſerved. Hence frequently incurable anchyloſis, or caries, is produced. When that happens, to prevent ſuch dreadful and obſtinate complaints, if the ſtrength remains, and the pulſe is hard, reſolution ought to be attempted by repeated bleeding, alternated with proper cathartics *. But if the pains in the bones are very obſtinate, and threaten to deſtroy the bones or joints, beſides external fomentations, and ano-

dyne and diſcuſſing cataplaſms, which are principally indicated, Störck † propoſes giving internally, extract of hemlock, wolfsbane, and *flammula Jovis*, having already, in an expreſs treatiſe, " concerning the powers and uſe of theſe remedies," delivered the method of employing them. And he adviſes the employment of nearly the ſame remedies in the malignant and tedious ulcers of the legs and other parts, which ſometimes ſucceed the ſmall-pox, and weaken the body. Others prefer decoctions of ſarſaparilla, *lignum ſanctum*, and bark-root, madder, ethiops mineral, crude antimony, and externally rubbing in mercurial ointment. But the greateſt benefit is derived from camphor, both externally and internally, as the celebrated Collin of Vienna has ſhewn in his treatiſe on the uſe of camphor. To which, if the remarkable healing power of the peruvian bark be added, we ſhall have greater reaſon to expect that the ulcers will be more apt to cloſe up.

* Störck, l. c. P. I. p. 283. † *Ibid.* p. 286.

279. In the mean time, particularly while theſe tumours are ſuppurating, the fever never diſappears intirely, being generally aggravated in the afternoon, or evening, and remitting in the morning. For it is ſymptomatic, and ariſes from the ſuppuration; and therefore, when the ſuppuration is finiſhed, it generally diſappears. Nevertheleſs, during its preſence, it may be in ſome

meaſure mitigated and checked by cooling, nitrous, and ſlightly antiſeptic things, and occaſionally by gentle purgatives. But if it aſſumes the intermitting type, the peruvian bark is generally employed; which if it does not prove ſerviceable by its febrifuge power, will be found uſeful on account of its ſtrengthening and antiſeptic quality, particularly when the quantity of pus diſcharged ſhews that almoſt all the ſound fluids are beginning to be converted into pus, and becoming putrid. Its effect, however, is more certain, and ſafer, in the true primary intermittents, which I have already ſaid (209.) are ſometimes combined with ſmall-pox from the very beginning. At whatever ſtage of the complaint, therefore, they appear, they ought to be immediately checked by the peruvian bark, that the natural courſe of the ſmall-pox may not be perverted.

* Meade, l. c. c. iv.

280. It muſt be obſerved alſo, that as ſoon as the ſecondary fever departs, and the ſmall-pox dry, the patient frequently appears languid and debilitated. This languor is removed by wine and water, and wine and whey mixed, or ſome ſuch analeptic. But when the debility continues long after the departure of the diſeaſe, and the patients are very ſlow of recovering their former ſtrength, nothing is found to reſtore them more quickly and efficaciouſly than milk, bark, and exerciſe *. After purging the *primæ viæ*, as

I have already ſhewn, the body may be nouriſhed with proper diet, gradually increaſed, until the patient returns to his former manner of living. At length, the puſtules having dried, and the ſcales completely fallen off, the whole body ought to be waſhed in the warm bath, or the ſkin ought to be gently bathed with a ſponge dipt in warm barley-water and milk, or ſoap and water, or hydromel, to recall the inſenſible perſpiration, and remove any remains of the variolous matter ſtill adhering to the ſkin. After cleaning the body in this manner, the cloaths, linens, and bed, ought to be changed, that the ſeeds of the contagion may be removed from healthy bodies. With reſpect to the ſcars, if they are deep ſeated, they are ſuppoſed to be obliterated, or at leaſt diminiſhed, by bathing them with aſs-milk, or the water of the flowers of beans, or an emulſion of ſweet almonds; or the mildeſt liniments, as the freſheſt oil of the yolks of eggs, may be applied to them by means of a hair-bruſh.

* Tiſſot, *Ep. Cit.* p. 48.

281. But among the ſequels of the exſiccation, when the diſeaſe is not completely reſolved, there is ſometimes a mild ſlow fever, like an hectic, which gradually waſtes the ſtrength. It at one time ariſes from the acrid variolous matter being retained, ſometimes from a purulent vitiation of the fluids, ſometimes from the quantity

of the pus flowing from the ſkin and the ulcers there, and withdrawing the nutritious fluid, ſometimes from a taint of the viſcera, particularly phthiſis pulmonalis. According to the variety of the cauſes alſo, muſt the cure vary. In general, however, unleſs the internal parts are affected with ſuch a taint as to defy the power of medicine, it ought to be oppoſed with the mildeſt cathartics; ſuch as, pure whey, milk, either alone, or mixed with water, or a decoction of bark,—which even by itſelf is conſidered by Morton and others in this caſe as being of the higheſt efficacy, —added to an equal, or ſomewhat greater quantity of milk*; emulſions of the cold ſeeds; the expreſſed juice of barley or oats, vegetable diet; but particularly the pure, warm air of the country; geſtation; and gentle exerciſe. Meade†, beſides purging, adviſes bleeding; the utility of which is likewiſe aſſerted by Sagar ‡. For the fever may ſometimes happen to be kept up by a phlogiſtic diatheſis of the blood, which is pretty clearly pointed out by the hard pulſe, acrid heat, and ſuch like ſymptoms.

* Morton, l. c. Tiſſot, l. c. p. 33. 47. † L. c. c. iv.
‡ *De Var. Iglav.*

282. I have already mentioned (208.) that the eyes alſo are affected in various ways by the ſmall-pox. Nor does this happen only during the eruption or ſuppuration, but likewiſe after

the complaint is intirely removed. But as I have hitherto ſaid nothing of the treatment of theſe affections, I ſhall now proceed to point out the remedies adapted to them at both periods. I ſhall begin with thoſe affecting the external parts and eye-lids. Theſe occaſionally become very much ſwelled, tenſe, painful, and cloſe the eyes. The lachrymal fluid under them being infected with the acrid variolous matter, irritates and inflames the *tunica conjunctiva*, in conſequence of which the pain is increaſed, and warm, acrid tears are expreſſed. When this happens, the eyes ought to be bathed with a very fine ſpunge or rag, dipped in tepid milk and water. Thus the pain and tenſion are mitigated, the acrimony allayed, the acrid variolous matter is waſhed off, the inflammation diſcuſſed, the corroding ſenſation prevented, and the eyes opened. But if the eyes are bathed in this manner at firſt, and the bathing repeated every hour, theſe complaints are frequently prevented, and the palpebræ never become completely cloſed. Likewiſe a decoction of barley, or flea-wort ſeeds, anſwers this purpoſe; for it is found to alleviate the pain in a remarkable manner. Others endeavour to preſerve the eyes againſt theſe accidents, merely by the water of white roſes, frequently applied, and warm, or ſimply cold water, or chalybeate water, with the view of preventing the puſtules breaking out on the eye-lids, or the eyes themſelves *. But if

they, notwithſtanding, do break out there, then the *aqua ſpermatis ranarum*, or that of mallows, or elder-flowers, may be employed †, or very light milk-poultices may be applied to them ‡. A poultice made of the pulp of ſweet apples and milk is found to be moſt ſerviceable, eſpecially for alleviating the pain, and allaying the inflammation. Generally, however, it is ſufficient merely to foment the eyes with milk and water, to exclude the light, and keep the patient quiet. In the caſe of a more ſevere affection, and when a greater degree of inflammation is ſuſpected to be preſent, diluents muſt be employed internally, together with antiphlogiſtic remedies, bleeding, pediluvium, and other revellents.

* Azzoguid. *Let. Cit.* p. xxxii. xxxiii. † *Id. ib.* ‡ Tiſſot, *Ep. Cit.* p. 48.

283. The ophthalmia, which ſometimes ſupervenes towards the end of the ſmall-pox *, muſt be treated with bleeding, and diluent and antiphlogiſtic remedies, as whey and cathartics. In which caſe alſo, bliſtering the ſkin with cantharides contributes very much to occaſion revulſion, particularly if the complaint be of long ſtanding, or apt to return. But if the violence of theſe complaints is ſuch as to give riſe to abſceſſes, hypopyum, or the deſtruction of the eye itſelf, the treatment of them becomes the province of ſurgery. The commoneſt effects, however, left in the eyes

by the ſmall-pox, are ſpecks, leucoma, ſmall ulcers in the cornea, phlyctænæ, epiphora, and chronic ophthalmia, which is very apt to recur upon any ſlight occaſion. Various remedies are propoſed by phyſicians and ſurgeons in treating each of theſe affections, the greater part of which, however, are either hurtful or ſuperfluous. The leucoma, ſpecks, ulcers of the cornea, and phlyctænæ have been very frequently obſerved to diſappear merely by the aſſiſtance of nature and length of time; while it is found that they are very much exaſperated by waſhes, ophthalmic waters, liniments, perfumes, and particularly the various kinds of powders, generally blown or poured into the eyes. But the greateſt advantage ought to be obtained from the manner of living employed, and thoſe things which correct and draw out the acrid and vitiated fluids, and cauſe their gradual and gentle excretion. The chief of theſe are the juices of the cold herbs, or their decoctions, mineral waters, the freſh-water bath, and purging at proper intervals. Likewiſe the whey of goats milk, aſs-milk, decoctions of ſarſaparilla and bark-root, are of great utility, and their employment muſt be regulated by the patient's temperament, and habit of body, by the ſeaſon, and other circumſtances. In the caſe of an obſtinate watering of the eyes, and when the ophthalmia returns, and is of long continuance, I have more than once obſerved the greateſt advan-

tage to be derived from a large blifter applied between the fhoulders, and kept open for a length of time, and afterwards from a cautery in ne of the arms; the utility of which, as a preventative, experience has often fhewn. Sometimes the eyes continue to be affected with very troublefome pains for a long time, to remove which, and the fpots on the cornea, Störck recommends extract of black anemone, with the addition of a very fmall dofe of magnefia alba, given at intervals †. It is to be obferved, however, that the eyes are fometimes inflamed and feverely affected by this medicine, in confequence of which its employment requires great caution.

* Störck, l. c. P. 1. p. 285. † *Ibid. et Formul.* n. 48. in part. 2.

284. The ears likewife become affected in different ways (208.). The pain and inflammation of them require almoft the fame remedies which I have recommended in the cure of the eyes (283.). But the abfceffes and ulcers ought to be gently wiped, and allowed to continue open a long time, and not to dry, until after having to no purpofe employed thofe remedies, which are apt to correct the bad habit of the whole body, and dyfcracy of the blood. For, on prematurely checking the flow of the pus, metaftafes generally take place, in confequence of the hurtful matter being transferred to the brain. Enough, then,

of the complaints accompanying or ſucceeding to the ſmall-pox. It remains for me to take notice of a particular ſymptom which may ſupervene in any ſtage of the complaint, but which occurs more frequently during the eruption or ſuppuration, I mean the *iſchuria*, already mentioned (207.). It is relieved, as Sydenham remarks *, by riſing out of bed, and gently walking about the room. When this happens in conſequence of a diſeaſed ſtate of the bladder, fomentations applied to the hypogaſtrium and perinæum, and emollient and relaxing injections, cauſe a flow of the urine. Meade † is of opinion that the laſt ought to be employed when there is reaſon to apprehend the ſtriking in of the puſtules from cold being caught. Laſtly, if the bladder is ſwelled and painful, and other remedies have been employed to no purpoſe, the urine ought to be drawn off with the catheter, particularly when the patient is grown up. Diuretics are inadmiſſible, unleſs in the *ſpurious iſchuria*, as it is called, in which the urine is deficient in conſequence of the ſecretion not going on in the kidneys. If the voiding of urine at the ſame time is attended with *ardor urinæ*, it muſt be allayed with internal and external relaxing things, and eſpecially with drinking an emulſion of melon-ſeeds, and ſweet almonds, with the addition of ſyrup of marſh-mallows, or barley-water, or marſh-mallow root, or liquorice-

root, marſh-mallow flowers, verbaſcum, and the like.

* *Oper.* ſect. 2. c. 2. p. 179. † L. c. c. 4.

485. It is now time to cloſe my account of the cure of the genuine natural ſmall-pox. I ſhall probably appear to have been too tedious to ſuch of my readers as have been much verſed in medical ſcience, and require rather a ſynopſis of the chief heads than a more diffuſe treatiſe. But when they conſider that theſe Inſtitutions are deſigned for the inſtruction of ſtudents alone, who ſtand in need of the moſt ample information, they will overlook my prolixity. For, with a view to their improvement, I conſidered it as neceſſary to enumerate, not only the remedies generally ſerviceable at any period of the diſeaſe, but alſo every thing from which any advantage may be derived in the particular ſpecies and ſymptoms of the complaint; in doing which I hope I have done them an acceptable ſervice. I have deſignedly ſaid nothing of the combination of ſmall-pox with the *petechial* and *miliary eruptions*, which ſo often takes place (205.). For when theſe eruptions are ſecondary, they ſcarcely require any other method of treatment than that which is adapted to the cure of ſmall-pox: but, when primary, whatever other remedies may be conſidered as neceſſary, will be found in the tenth and eleventh chapters, and therefore need not be enumerated in this place. But I ſhall now pro-

ceed to the *inoculated ſmall-pox*, which the order requires my diſcuſſing in the next place.

THE INOCULATED SMALL-POX.

286. It is neceſſary at length to treat of the *inoculated* or *artificial* ſmall-pox, which I have already mentioned (166.). The ſmall-pox communicated by the inoculation of the matter are ſo named. But there are ſeveral kinds of inoculation, of which, as an immenſe multitude of learned writers have treated at great length *, ſo that almoſt every perſon is now acquainted with the various modes of practiſing it, it will be ſufficient here to ſelect and explain the mode which is generally conſidered as the ſimpleſt, moſt convenient, and ſafeſt of all.

* Whoever is deſirous of fuller information, may conſult the following authors of many others who have written on the ſubject.

Emanuel Timoni, *Epiſt. ad* Jo. Wodward, 1713.

Pilarini *Nova et Tuta Variolas Excitandi per Tranſplantationem Methodus*, Venet. 1715.

Kirkpatrick's *Analyſis of Inoculation, &c.* London, 1754.

Tiſſot, *L'Inoculation Juſtifiée*, A Lauſan, 1754.

Condamine *Memoria ſull' Inoculazione del Vajuolo*, Livorno, 1755. *Second. Mem. del Medeſimo*, Livorno, 1759.

Manetti *Della Inoculazione del Vajuolo*, Firenze, 1761.

Reflexions ſur le Prejugés qui s'oppoſent aux Progrès, et a la Perfection de l'Inoculation, par M. Gatti, *Médecin. conſultant du Roi, et Profeſſeur en Médec. dans l'Univerſité de Piſe*, A Paris, 1764.

Zulatti *Notizie de gl' Inneſti di Vajuolo fatti in Cefalonia*, nel 1764. Vid. *Giornal. Medic.* vol vi. N. xxxiv. et ſeq.

Gio. B. Lunadei *Del Metodo d'Inneſtare il Vajuolo*, in Urbino, 1766.

Nouvelles Reflexions ſur la Pratique de l'Inoculation, par M. Gatti, A Paris 1767.

The Preſent Method of Inoculation for the Small-pox, &c. London, 1768. Vid. *Magazzino Toſcana*, T. I. P. I. et ſeq. ann. 1770. Di Tommaſo Dimſdale. Porta *il Juniore Diſcorſo in favore dell' Inneſto del Vajuolo*, Milano, 1774.

287. After paſſing from the hands of the rudeſt nations and quacks, into thoſe of medical men of character, it became a queſtion, in what manner it might be reduced to the rules of art, the more certainly to inſure its beneficial effects. It then occurred to them to be proper to render the perſons deſigned to be inoculated fitter for its reception. Accordingly, if plethora, or a bad ſtate of the fluids, was preſent, it was judged proper to remove it by employing bleeding, purging, proper diet, and the like. This was called *preparing for inoculation.* But this practice has at length fallen into total diſuſe. For the beſt inoculators reaſon thus: The perſons to be inoculated are either in good health, or not. If they are healthy, they do not ſtand in need of preparation, for they might be ſo altered by it as to be made to recede from a ſtate of perfect health. If they are unhealthy, they ought to be cured of the diſeaſe under which they labour, before being inoculated, and their health reſtored; for thus they become fit for ino-

culation. They therefore reject all preparation as ſuperfluous, or hurtful, unleſs by it we mean the reſtoration of the health, whenever it has been injured.

288. Therefore the ſubjects for inoculation ought to be ſound and healthy. I call thoſe people healthy who perform the functions of the animal economy with eaſe and alacrity, and without laſſitude; who are of a good habit of body; who breathe gently; whoſe breath is inodorous, and by no means fetid; who are neither liable to convulſions nor cutaneous diſeaſes; who are ſufficiently ſtrong, have a good appetite and digeſtion, while at the ſame time the excretions go on properly, and good ſleep is enjoyed; who have a ſoft fine ſkin, readily healing on being accidentally cut; who have neither a ſcorbutic, venereal, nor ſcrofulous taint, nor any other remarkable vitiation of the fluids. Such are the proper ſubjects for inoculation; though it muſt be confeſſed that perſons have been ſometimes inoculated who were not in perfect health, but valetudinarians and weakly, and who nevertheleſs were affected with the diſeaſe in its mildeſt form *.

* Störck, *Diatr. de Inſit. Var.* Vid. Franc. Xavier de Waſſerberg, *Faſcic.* I. p. 3. Likewiſe *Med. Pract.* P. I. p. 295.

289. Neither any age, ſex, or time of the year, are exempted from inoculation being performed, neither infants, children, young people, women, nor old people. For in all of them repeated ex-

periments have ſhewn, that inoculation has been practiſed with ſafety and ſucceſs. But the period of geſtation and puberty ought to be avoided. From five to ten or twelve, however, is ſuppoſed to be the moſt proper time of life; and the ſpring is preferable to other ſeaſons, and next the beginning of autumn, although the autumn is condemned by many, on account of being infeſted with ſevere diſeaſes, diarrhœas, and dyſenteries. But it is ſtill more neceſſary to avoid unhealthy ſtates of the air, during which malignant, exanthematic, or putrid diſeaſes, prevail epidemically; becauſe there is reaſon to apprehend that the ſmall-pox may partake of the bad diſpoſition of the epidemic or ſtationary diſeaſes, or become combined with them. But it is proper, as far as that can be done, to chuſe a ſituation as free as poſſible from the ſeeds of the contagion, rather in the country than in town, where the air is temperate and healthy; the patients ſhould live in a large houſe, with roomy apartments, and windows looking in all directions, ſurrounded with pleaſant greens and walks, incloſed with high hedges or walls, or covered with ſhades, where they may range about without injury.

290. But every kind of preparation, at leaſt with reſpect to diet, does not appear deſerving of being wholly condemned. Therefore, ten or twelve days before the inoculation, the diet ſhould

be ſimple, bland, almoſt intirely vegetable, and cooling. Rice and barley broth, and water-gruel; delicate animal food; herbs and fruit; freſh eggs, particularly combined with other things, and farinaceous meats, are generally given in ſuch quantity as to ſatisfy the appetite. Robuſt patients, full of blood, or thoſe of a warm temperament, ought to abſtain from fleſh, though the ſoups made from it, and the other articles of diet already mentioned, may be allowed. Likewiſe freſh-water fiſhes, frogs, and delicate paſtes, may be ſubſtituted in the room of land-animal food. And if the patient prefers milk, and things prepared with it, they may be allowed him. For the drink, may be given pure water, occaſionally prepared with lemon or orange juice, and a little ſugar. Some phyſicians, however, are of opinion that the uſual manner of living ought not to be changed; and quote inſtances of this being done without injury. And I am willing to allow the propriety of this, when the patients uſually employ an innocent diet, neither improper in quantity or quality, and do not uſe too much acrid, heating meat or drink. Nor ſhould I conſider it as improper, if the *primæ viæ* abound with ſordes, or the preſence of worms is ſuſpected, to purge the belly once or twice gently, or to have recourſe to ſome anthelminthic. Otherwiſe it will be ſufficient, if the belly is bound, by means of an injection every other day to open it, and keep it ſo.

Some likewiſe, immediately after the inoculation, propoſe immerſing the whole body once or twice in the tepid bath *; which I ſhould recommend chiefly when the ſkin, being too dry, as it generally is in adults and active people, requires to be ſoftened and gently relaxed.

* Ludwig, *Inſt. Med. Clin.* P. I. c. i. ſubſect. vii. § ccviii.

291. At the concluſion of the period ſet aſide for preparation, the perſon is inoculated. Among the various means employed for effecting it, inoculators give the preference to the matter of the ſmall-pox, and chuſe it when freſh, the more certainly to inſure its being communicated. For that which is old is incapable of exciting the complaint. They prefer it when newly taken from puſtules that have begun to ſuppurate. For, being thinner, it is much more eaſily inſerted, and imparted to the abſorbents, than when it is more concocted and thicker, in which ſtate it is afforded by the puſtules that have become thoroughly ripe. It is probably alſo milder than that which is riper, if what inoculators ſay be true. But they allege that that matter is of a milder nature which is taken from the puſtules of ſuch as have the diſeaſe by inoculation. For a much milder diſeaſe is ſaid to be occaſioned by it, and its mildneſs is ſuppoſed to be proportioned to the greater number of ſucceſſive inoculations through which the ſame matter has been transfuſed *. But it is proper alſo to chuſe a part for the inoculation; for although

every part ſeems calculated for it in the opinion of ſome, experience has ſhewn that two parts in particular are to be preferred; one of which is the outſide of the hand, between the fore-finger and thumb, as the greater flaccidity of the ſkin there ought to excite leſs uneaſineſs during the inflammation, and, beſides, the epidermis there is thicker and firmer, and better calculated for the inſertion of the matter, as it can be eaſily ſeparated and raiſed from the ſkin without being ruptured. The other is the upper part of the arm, all of which is conſidered as calculated for receiving the inoculation. Some chuſe that part where the iſſues are placed; others prefer the anterior or exterior part about half way between the elbow and top of the humerus. But the lower extremities are conſidered as leaſt fit for the purpoſe on many accounts; chiefly, however, becauſe the puſtules upon the legs dry with more difficulty, and ulcers take place there which are very tedious of healing up †, as often happens in the confluent ſmall-pox.

* Gatti, *Nouv. Reflex.* p. 82. I know very well that Störck and others employ every kind of matter indiſcriminately, without obſerving any danger to follow. † Gatti, l. c.

292. The virus is inſerted either by means of a needle ſomewhat flattened at the point, which is the moſt ancient and convenient method, or by means of a lancet, which is now generally uſed. But whether the needle or lancet is employed, it is ſtruck into the puſtule full of ſuch pus as I

have mentioned, ſo as to be properly tinged with the pus. Thus tinged, it is carried to the chamber where the perſon to be inoculated is; for he ought to be far removed from the patient from whom the pus is taken, that he may not be terrified by ſeeing him, or inhale by the mouth and noſtrils the contagious effluvia proceeding from his body. Then the point of the needle or lancet is gently inſerted tranſverſely, between the epidermis and cutis vera, for the length of about a line and a half, or two lines. It muſt then be detained there a little, and moved about, that the pus may be carried off and adhere to the ſkin. At laſt, by placing the finger upon the part the epidermis is compreſſed, while the needle or lancet is retracted, leaving all the matter behind. Nor is there any occaſion for wounding the cutis vera, which ſome recommend, to inſure the effect of the inoculation. For the moſt expert inoculators guard againſt the ſlighteſt effuſion of blood. If it be doubted that one inoculation is ſufficient to impart the complaint, which it generally is, we may repeat it in the other hand or arm to the number of three times; that is, twice on the one ſide, and once on the other; by which, without doubt, the contagion will be communicated, if the body is prepared for its reception. For it is not ſafe raſhly to multiply the inoculations; experience having ſhewn, that ſuch as have received a good many wounds or inoculations, have expe-

rienced both a more numerous and ſevere eruption, than thoſe who are inoculated only in one or two parts. Hence it appears, that the number and ſeverity of the puſtules are generally proportioned to the quantity of the matter inſerted *. On retracting the needle or lancet, the part ought by no means to be covered with a plaſter, or bound with a ligature. For the virus thus applied adheres ſufficiently, and to a certainty opens a paſſage for itſelf into the veins.

* Gatti, *Nouv. Reflex.* p. 78. 79.

293. The needle or lancet, thus tinged, preſerves its power for ſome days, and likewiſe the pus expreſſed from the puſtules retains it for a long time, provided it be kept in a glaſs vial, and the air be carefully excluded. But if enough of recent matter cannot be procured, the dried cruſts, reduced to a fine powder, may be ſubſtituted inſtead of it. A cotton or ſilk thread is put into the powder, and allowed to remain in it a long time, or it is well rubbed with it, that it may attract the power of the contagion. This thread is paſſed between the ſcarf-ſkin and cutis vera for two or three lines by means of a needle: I ſay *paſſed through*; for it muſt not be left there, as ſome propoſe; becauſe every thing extraneous, by its irritation, excites inflammation, and proves injurious. Inſtead of the thread, a needle or lancet rubbed with the variolous powder may be inſerted in the ſame manner; nor is there any oc-

caſion for thruſting the powder along with it between the epidermis and cutis vera *, that it may not occaſion troubleſome irritation. Such is the method which appears to be moſt eligible.

* Gatti, l. c. p. 83. 84.

294. The artificial ſmall-pox alſo have diſtinct ſtages. The *firſt* begins with the inſertion of the pus, and extends until a ſlight degree of inflammation appears where the wound had been inflicted. Nothing remarkable about the wound takes place for one or two days. Nay, its lips ſeem ſo united that they leave ſcarce any diſcernible veſtige. But generally on the third day a ſlight degree of inflammation, ſometimes accompanied with itching, takes place in the part; and hence the beginning of the *ſecond* ſtage is dated, which laſts about three days before the arrival of the real fever, ſhewing that the internal parts are at length affected with the contagion. But that inflammation is a kind of variolous eruption, not differing from the general one, about to take place, and obſerving the ſame progreſs as the puſtules on the reſt of the body. It differs from them, however, in appearing without any fever, or internal affection, being the effect of the contagion, as the affecting only the neighbouring parts. At one time it ſhews one puſtule, in the middle of which a ſpot appears, like a flea-bite, being the mark left by the wound; at an-

other time it exhibits a congeries of puſtules, like a cluſter of the confluent ſmall-pox. On the *fourth day* the redneſs expands into a circle, like a large mark occaſioned by a flea-bite, but ſomewhat raiſed above the ſkin. An itching is frequently felt in the part; and an uneaſy pain is perceived in the *axilla* and upper part of the arm. The puſtules gradually increaſe, become painful, elevated, tenſe, and truly inflamed. In the mean time the pain in the *axilla* increaſes, and extends to the ſhoulder-blades. Sometimes a ſimilar pain occurs in the groin. At laſt a heavineſs of the head comes on, or a headach, and likewiſe pains in the loins, ſometimes ſickneſs, loſs of ſtrength, and ſometimes a copious diſcharge of urine: which ſymptoms precede the immediate acceſſion of the fever. At times, however, theſe ſymptoms are either intirely abſent, or are very ſlight, and of ſhort duration, and quickly ſucceeded by the fever, which affords a certain proof of the action excited over the whole ſyſtem by the variolous matter.

295. This fever does not come on in all places, and in every ſubject, at the ſame time after the inoculation. It generally attacks ſooner in the warm, and later in the cold latitudes. In Italy it commonly occurs on the fifth or ſixth day. And I find the ſame thing occurred to the patients inoculated by Störck at Vienna in the ſpring-time, and towards the beginning of ſum-

mer. The fever is accompanied with more intenſe heat, thirſt, nauſea, headach, pains of the loins and almoſt all over the body, languor of the eyes, white tongue, frequent, irregular pulſe, diſturbed ſleep, and the other ſymptoms which are conſidered as peculiar to the natural ſmall-pox; but they are generally all much milder, and ſuch as occur in the mildeſt kind of ſmall-pox. In the mean time the puſtules that have ariſen in the ſpot where the matter was inſerted, begin to be filled with a fluid, and grow pellucid. The redneſs around them is diffuſed more widely, and the ſkin becomes more tenſe and painful. On the ſecond and third day of the fever the patients ſhiver and glow alternately, the fever is aggravated, the ſtrength is more exhauſted, they complain loudly of vertigo, headach, pains in the neck, eyes, back, nay, in the limbs; are very thirſty, and emit a foul variolous odour, which is peculiar to this complaint. The puſtules in the mean time undergo violent inflammation about the place of inſertion, and haſten towards ſuppuration. But as ſoon as they break out on the face and the reſt of the body, the fever along with all its ſymptoms abates, or intirely ceaſes.

296. With this general eruption the *fourth ſtage* commences. If the fever comes on upon the ſixth or ſeventh day, the eruption will take place on the ninth or tenth. For it generally appears

on the ſecond or third day after the invaſion of the fever. It is ſometimes, however, put off even to the eleventh day. During the eruption, although the puſtules above the place of inſertion contain true and ripe pus, they ſtill remain intenſely red around. On the ſecond day, however, the patients feel themſelves well, the pulſe being almoſt as calm as natural. While the puſtules increaſe in number, the redneſs of the marks where the inſertion was made is diminiſhed, or next day diſappears intirely. Within three or four days the eruption is ſo complete, that on the twelfth, thirteenth, or fourteenth, according as its appearance was earlier or later, the puſtules at length begin to ſuppurate, which is called the *fifth ſtage;* and on the fifteenth they become quite ripe. Nor during the ſuppuration does any ſecondary fever of importance ariſe, unleſs we conſider in that light ſome elevation and quickneſs of the pulſe, which take place particularly in the evening, being the effect of the ſuppuration, accompanied with irregular ſhiverings, pain of the puſtules, and ſome interruption of the ſleep; although theſe ſymptoms only occur when the number of the puſtules is very great, which ſeldom happens. On the puſtules ripening, the ſtrength, appetite, and natural ſleep return. The puſtules about the place of inoculation dry, and the cruſt gradually ſeparates and falls off, leaving a round ſcab or

red mark. The puſtules alſo, after the ſuppuration, enter on the *ſtage of the exſiccation*, which is the laſt. They dry juſt in the ſame manner as in the mild diſtinct complaint, that is, without being attended with any ſevere ſymptom.

297. Such is the moſt uſual courſe of the artificial ſmall-pox. They are frequently ſo mild, and the eruption ſo ſcanty, that very few puſtules break out, and are therefore attended with very ſlight ſymptoms, both during their inflammation and ſuppuration. Nay, not unfrequently the fever excited by the inoculation is ſucceeded by no puſtules; in which caſe, although a real eruption does not take place, the puſtules that ariſe about the place of inſertion are ſaid to be ſufficient of themſelves for drawing out the whole force of the variolous miaſma. It is therefore an undoubted fact, that the variolous fever ſometimes occurs unaccompanied with the eruption, and that it alone equally inſures the inoculated patient againſt the ſmall-pox as if he had had a full eruption *. I do not deny, however, that the inoculated ſmall-pox have ſometimes become confluent and dangerous; that in other caſes they have been combined with ſome other exanthematic diſeaſe †; that in many patients they have left tedious ulcers, eryſipelaſes, and various abſceſſes; and alſo that ſome people who have had the artificial complaint have at length fallen

into the natural one ‡;—but it muſt be remembered, that this is an accident to which the natural ſmall-pox alſo are liable.

* Gatti, *Nouv. Reflex.* p. 143. 144. † An inſtance which very lately occurred, of the artificial ſmall-pox having been combined with meaſles, and which became completely confluent and dangerous, may be found in vol. lx. of the *Journ. de Médec.* an. 1783. p. 120. ‡ Gatti, l. c. p. 11.

298. But they are generally mild and ſafe. Their mildneſs and ſafety, however, is almoſt wholly owing, not to medicines, which they do not require, but to the inoculation itſelf, and the regulation of the diet. The regimen again intirely conſiſts in the obſervance of a few rules. From the time of inoculation until the arrival of the fever, nothing ſhould be changed, either in the diet already recommended, or in the cloathing. The patient ſhould merely be gradually accuſtomed to the open air, and frequent walking, together with various amuſements, in order that afterwards, when he ſtands more in need of theſe auxiliaries, he may the more readily apply to them. I conſider it as being uſeleſs or ſuperfluous, if not hazardous, on the very firſt day, as ſome inoculators recommend, to adminiſter Dimſdale's powder, conſiſting of calomel, tartar-emetic, and abſorbents, which acts both as an emetic and cathartic. For it frequently occaſions nauſea, vomiting, gripes, and other diſorders; or, although it be omitted, provided the other rules in

the regimen are obſerved, the eruption is generally equally mild. Nor ought any other cathartic to be taken, unleſs the nauſea, vomiting, want of appetite, or other ſymptoms, point out the preſence of ſordes in the *primæ viæ*. In which caſe, if it has not been already done, it will be allowable to adminiſter a cathartic. Otherwiſe it will be ſufficient every other day to open the belly, if it is coſtive, with an injection. I look upon it as a very proper practice, from the inoculation until a full eruption takes place, to immerſe the feet every evening for half an hour in moderately warm water.

299. But on the fever commencing, it then becomes neceſſary for the patient, even to the very concluſion of the eruption, to breathe free, pure, and cold air, and renewed in ſuch a manner that the ſame air may not be reſpired a ſecond time. Moreover, during the day the patient ought to remain out of bed, and, in particular, carefully avoid ſleeping. But if, on account of the patient's tender age, as in the caſe of infants, it is requiſite in the day-time alſo; it ought to be taken in the open, cool air. All kind of melancholy or mental languor ought to be baniſhed by merriment, ſinging, concerts of muſic, and other amuſements accommodated to the patient's time of life, but particularly walking, ſo as to enliven the mind, and promote the perſpiration, without

agitating the body, or deranging the circulation. But if the patient is ſo weak as not to be able to ſtand or walk, he ought to be carried into the open air, and left there, until reviving he begins of his own accord to get upon his legs and move about. For ſuch is the power of the pure, cold, and free air *, that the ſtrength is immediately improved by it, and the anxiety and fever very much allayed. But if that cannot by any means be done, or does not anſwer our expectations, the patient ought to be carried about in a coach, through pleaſant parts of the country and agreeable open plains. If it is rainy and windy, or damp and hazy weather, or if ſudden cold prevents his going abroad, he muſt continue at home, but walk up and down in his chamber, avoiding the viciſſitudes of the weather, but not the cautious admiſſion and renewal of the air. In this manner whole days ought to be ſpent, excepting at meal-times, when the patient may remain at reſt. But long ſitting likewiſe ought to be avoided, that the ſtrength may not fall, and the limbs become torpid. Laſtly, he ought to go to bed at his uſual hour, pretty much fatigued; and the chamber in which he lies ought to be large and well-aired. With reſpect to the living, during the whole period of the fever and eruption, the meat, provided it be of the kind already mentioned (290.), may be accommodated to the patient's taſte. Nature will beſt point

out the quantity which ought to be taken; for if the patient is ſolicited by a falſe appetite to eat, he will ſoon complain of ſatiety, and leave off. Nature, then, ſhews how much, and at what times, it ſhould be taken. For the drink, may be given cold water, which may be rendered more agreeable and ſerviceable with the addition of citron-juice and ſugar. Thoſe who are accuſtomed to breakfaſt, as children, who cannot bear hunger, may take their uſual one; and the ſame thing may be ſaid of their afternoon meal.

* No one, probably, ſets a higher value on the employment of cold air than the celebrated inoculator Gatti. But leſt it be ſuppoſed that no bounds ought to be ſet to its praiſes, let us hear his own words: "I only deſire," he obſerves, "the inoculated patients to avoid the extremes both of heat and cold, and, as if they enjoyed good health, to chuſe ſuch a temperature to breathe in as they find moſt agreeable." *Nouv. Reflex.* p. 112.

300. Though it is propoſed by ſome to continue this regimen only to the end of the eruption *, as if the complaint ariſing from the variolous miaſma terminated here, and the remaining ſtages, or thoſe of the ſuppuration and exſiccation are to be conſidered apart as the effects of the inflammation of the puſtules, which generally depart ſpontaneouſly without the phyſician's aid, —others, however, are of opinion, that both during the ſuppuration and exſiccation the patients ſhould perſiſt in the ſame regimen, and, even when a full eruption takes place, recommend to them

remaining conſtantly in the open, cold air, without paying attention to their complaining of ſhivering and cold; for they affirm that they never receive any injury from it. For my own part, I neither conſider ſuch a cooling regimen as altogether neceſſary at that time; nor, in my opinion, is it proper raſhly to expoſe the body, during the ſuppuration of the puſtules, to the inclemency of the weather, as it is not altogether free of danger. It will be better, if they guard againſt too ſharp, cold air, and remain a ſhort time out of bed, continuing long in their chambers, which ought not to be completely ſhut up, but freely communicate with the air, and walking about in them as much as the pain of the puſtules on the feet and legs will allow. It is to be obſerved alſo, that the full puſtules, if they do not open of their own accord, may be pricked with a needle, and the pus expreſſed, by which the pains are relieved, the exſiccation accelerated, and the ſtriking in of the variolous matter prevented. On the exſiccation being finiſhed, practitioners have been in the habit of twice or thrice purging the convaleſcents at proper intervals; which cannot be condemned, if it be done mildly, and the medicine accommodated to the patient's age, temperament, and habit of body. When the ſcales have at length fallen off, the whole body ought to be waſhed with tepid milk and water, as I have already obſerved is practiſed in the natural ſmall-

pox. Some prefer employing the milk expreſſed from melon-ſeeds, in which ſome camphor is diſſolved. They gently rub the ſkin with a ſpunge dipped in it when warm, and afterwards cauſe all the moiſture to be abſorbed, by placing dry linen rags on it. In the mean time, according to the ſtate of his appetite, the patient muſt gradually return to his former manner of living. But he muſt have no communication with ſuch as have not had the complaint, for forty days after the inoculation, and until other cloaths have been ſubſtituted in place of the infected ones.

* Gatti, l. c. p. 132.

301. But although the mild and regular artificial ſmall-pox terminate favourably, merely by uſing a proper regimen, if they ſwerve from their uſual mildneſs, and are accompanied with ſevere ſymptoms, which do not yield merely to regimen, and require more powerful aid, we muſt have recourſe to the method of cure already mentioned, as being generally adopted in the natural ſmall-pox. At times the inoculated ſmall-pox are not merely ſevere and dangerous, but alſo fatal; although this very ſeldom happens, compared with what takes place in the natural diſeaſe, than which the artificial one is with reaſon conſidered as being ſafer and milder. But the arguments which are commonly employed, to point out the advantage which inoculation has over the ſpontaneous ſmall-pox, may be reduced

to the following heads: 1. Becauſe it may be inſtituted in healthy, or properly prepared bodies; 2. becauſe a proper age and ſeaſon are choſen; 3. becauſe the prevalence of very ſevere epidemies is avoided; 4. becauſe a very ſmall portion of the matter is employed in inoculation, and only applied to the ſkin; nor is the poiſon taken in by the mouth and noſtrils, as happens in the natural ſmall-pox, and occaſions greater danger; 5. becauſe the contagion thus communicated is found to diſorder the animal economy leſs; 6. becauſe the period of puberty and geſtation, parturition, old age, and malignant epidemies, are avoided by inoculation; 7. becauſe the beauty of the face is preſerved by it; 8. becauſe ſuch as are afraid of the very worſt and moſt fatal kind of ſmall-pox, as if by hereditary taint, in all probability may ſecure themſelves againſt that misfortune by inoculation, which generally gives riſe to a mild diſeaſe, of the diſtinct kind; which laſt conſideration has appeared of ſuch conſequence in our times, that the moſt powerful princes, whoſe anceſtors have had the natural ſmall-pox in the ſevereſt manner, have very ſucceſsfully ſecured their children againſt ſuch danger by means of inoculation.

The Variolous Fever without Small-pox.

302. In the ſame manner as the ſmall-pox occur without the fever (160.), ſo the *variolous fe-*

ver ſometimes occurs without ſmall-pox. This is generally obſerved to happen when they prevail epidemically. Some, however, call this in queſtion, though I ſuſpect without reaſon. Ludwig declares *, "that in certain caſes the variolous fever comes on without an eruption." A good many other writers of great reſpectability adopt his opinion †. But it does not occur ſo frequently and decidedly to the obſervation of any one as that of inoculators (297.). For not unfrequently at the uſual time after the inoculation a fever comes on, which continues ſeveral days, and then goes off without being followed by an eruption of puſtules. Who would not call it a variolous fever?

* *Inſt. Med. Clin.* P. I. c. i. ſubſect. vii. § 176. † Azzoguidi, *Let. ſopra il Vaj.* Nor does Tiſſot ſeem to differ in opinion from them.

303. This fever begins and holds on, attended with nearly the ſame ſymptoms which generally precede the eruption of the ſmall-pox; and it is cured in the ſame manner as that which takes place accompanied with the ſmall-pox. It is alſo occaſionally attended with ſuch a ptyaliſm as is peculiar to the confluent ſmall-pox *, by which its variolous nature ſeems to be more clearly pointed out. Its duration is variable; as it ſometimes runs a ſhort, at others a longer courſe. But it is ſuppoſed to terminate without the puſtules, becauſe the variolous miaſma, on account

of being milder and finer, may pafs through the cutaneous veffels, in a ftate of relaxation, without ftraitening them by its irritation, or obftructing them by its denfity, and thus fly off. It is likewife probable, that the other fluids, on account of the variolous miafma not having been thoroughly blended with them, have not been fufficiently affimilated to it, and therefore, being in fome meafure wavering and apt to pafs off, and not held faft, that it eafily efcapes through the cutaneous veffels without remaining any time in them. Sometimes, however, in this fever I have had an opportunity of obferving a part of that which ought to have paffed off, being depofited fomewhere in the fpaces of the adipofe membrane, give rife to an abfcefs by which the fever was critically refolved *.

* De Haën, *Div. Febr.* p. 97.

304. Therefore the *variolous fever unaccompanied with fmall-pox* is recognifed in confequence of the preceding contagion, the prevailing epidemy, the ufual fymptoms of the exanthematic fevers, which are peculiar to fmall-pox, and, laftly, the complaint's being refolved without any eruption of fmall-pox taking place. Sydenham * had defcribed a particular fever, to which he has given the name of *variolous*, and particularly a critical ptyalifm, by which it was refolved. I doubt much, however, that it is the fame as that of which we

are now treating: for, although it accompanied the variolous epidemy of the year 1767, 1768, and 1769, and aſſumed the diſpoſition of the predominant diſeaſe, as almoſt all diſeaſes do which ariſe during the prevalence of epidemic ones; yet in conſequence of the length of its duration, and the petechial eruption with which it was attended, I conſider it as being of a very different nature from that juſt now deſcribed.

* *Oper.* ſect. iii. c. 3.

THE SPURIOUS SMALL-POX *.

385. THE *ſpurious*, or *illegitimate* ſmall-pox, differ greatly both from the natural and artificial complaint, but particularly in ſlightneſs and ſhort continuance. They are generally preceded by no fever, or a very ſlight one, like an ephemera. On the firſt, or at leaſt the ſecond day, an eruption of puſtules takes place, which, though not numerous, are ſufficiently conſpicuous and prominent, ſparſe, and diſtinct. They reſemble puſtules, which are red about the margin, and tranſparent in the middle, on account of a veſicle there containing a lymphatic, or mucous fluid; and hence they are likewiſe named *lymphatic*, or *cryſtalline*, although they differ greatly from the cryſtalline ſpecies already noticed (183.). They very quickly attain their full ſize, which frequently equals that of a pea. Within two or three days the veſicle in the middle generally burſts, and the puſtules dry, leaving ſmall

ſcales, which fall off, and in general are ſucceeded by no cicatrices, or at leaſt only certain marks, which quickly diſappear †, and the whole diſeaſe generally terminates in three, four, or five days. It ſeldom continues longer; and if it ever proceeds more ſlowly, it departs intirely on the ſeventh day.

* *Synonyms.* The *Variola Lymphatica* of Sauvages, *Noſol.* cl. 3. ord. 1. gen. 2. ſp. 1. The *Varicella* of Vogel, *De Cog. et Cur. Morb. &c.* § cxxviii. The *Chicken-pox* of the Engliſh. The *Variolæ Lymphaticæ*, ſp. 1. of Sagar, cl. x. ord. i. gen. 2. ſp. 1. The *Simple Cryſtalline Small-pox* of Macbride. The *Ravaglione* and *Morbiglione* of the people of Tuſcany, commonly called *Vajuolo Salvatico.* The *Schiopetti* in other parts of Italy. Fanton, *Diſſ. de Antiquit. et Progr. Febr. Miliar.* p. 65. The *Cryſtalli* of ſome authors, Fanton, *ib.* p. 65. The *Petite Vérole Volante*, or *Verrete*, or *Verolette*, of the French. The *Eſclapete* in Languedoc. † Sagar, cl. x. ord. gen. and ſp. already quoted.

306. The diſeaſe of itſelf is quite ſlight, and almoſt void of danger *. It ſometimes prevails ſporadically, ſometimes epidemically †. It attacks infants and children almoſt only. It prevails ſometimes before, ſometimes after real ſmall-pox; but the having experienced the ſpurious diſeaſe does not exempt one from the genuine complaint, which is liable to occur at any future period. The ſpurious ſmall-pox require no other method of cure than a gentle diaphoretic medicine. In the winter-time moderate heat of the bed, and warm infuſions of teil-flowers, or elder-flowers, are generally ſufficient. But if there is any un-

uſually ſevere ſymptom, ſome of thoſe remedies may be employed already recommended in the cure of the real ſmall-pox; and at the concluſion of the diſeaſe the belly may be gently purged.

* Ludwig, *Inſt. Med. Clin.* § 177. † De Haën, *Febr. Div.* p. 10.

307. The *benign*, or *pointed variolæ verrucoſæ*, as they are named by Vogel, are a kind of variety of the preſent ſpecies. Theſe alſo reſemble red puſtules, but hard, and very like warts, and riſing above the ſurface, generally diſappearing in ſeven days. On account of the mildneſs of their diſpoſition, they are named *verrucoſæ benignæ*, in order to be diſtinguiſhed from thoſe elſewhere deſcribed (183.). Vogel has another variety of the ſpurious ſmall-pox, which he has named *duræ ovales* *. "In this ſpecies," he obſerves, "after a fever, generally of ſome days continuance, ſmall tumours are formed, of a dark red colour, hard, approaching to an oval figure, ſurrounded with a red circle, and ſomewhat larger than the genuine ſmall-pox. In two or three days they become ſomewhat ulcerated, and gradually dry, attended with a black colour, and at length become pale and ſubſide, while ſometimes new ones in the mean time ariſe; ſo that the diſeaſe, which generally terminates in eight days, is extended to ſeveral weeks, either without any fever,

or attended with a ſlow gentle one." Does this variety in fact belong to the ſpurious ſpecies of the complaint?

* L. c.

CHAPTER X.

OF THE PETECHIÆ, OR PETECHIAL DISEASE *.

308. SINCE the beginning of the ſixteenth century the petechial diſeaſe has been ſo univerſally known in Italy †, and the whole of Europe, that almoſt every body, immediately on hearing the name, underſtands by it certain ſmall ſpots, which appear thinly ſcattered on the ſurface of the body, generally of a red colour, ſometimes of a purple, or livid, or violet, or black, and commonly of a round form, ſometimes reſembling ſmall points, at others very ſimilar to freckles, or flea-bites, or rather ſmall drops of blood, but flat, and not riſing above the ſurface, nor raiſing the epidermis; except in a very few caſes, in which they have been obſerved to riſe ſomewhat above the ſkin ‡. But, according to the variety of their ſize and ſhape, they are alſo named *ſtigmata*, *punctícula*, *and lenticulæ*. In France, in conſequence of the red colour, which they generally ſhew, the name of *purpura* is commonly given to the complaint. Theſe ſpots in

Italy, are named *peticulæ*, and *peſtichiæ*, or, corruptly, *petechiæ*, the origin of the name not being well known ‖.

* *Synonyms.* The *Lenticulæ* and *Punctiçula* of Fracaſtor, *De morb. Contag.* l. 2. c. 6. The *Peticulæ* and *Peſtichiæ* of P. Sal. Diverſus, *De Febr. Peſt.* c. xiv. The *Purpura* of the French, and of J. Coyt: Thaer, *De Febr. Purp. Epid.* The *Purpura* of Sagar, *Syſt. Morb. Sympt.* cl. x. ord. 1. gen. 4. The *Petechiarum Morbus* of Strach, *De Morb. cum Petech.*

† Fracaſt. l. c. At that time it was conſidered in Italy as a new diſeaſe brought thither from the eaſtern parts of the world, and particularly from the iſland of Cyprus. Some indeed diſputed whether it had been known to the ancients or not. The common opinion was, that no traces of the complaint are to be found in their writings; for the eruptions, of which any mention is found to be made by them, ſeem rather to belong to the miliary puſtules, and ſpots raiſed above the ſkin, ſuch as gnats occaſion. Be this as it may, a late Engliſh writer, I mean Lind, does not doubt that Aetius in malignant fevers obſerved ſmooth plain ſpots, not raiſed above the ſkin, like flea-bites. But it is ſtill a matter of doubt whether or not, in that paſſage, *culicum morſibus* ſhould be ſubſtituted in room of *pulicum*. Certainly Petrus A Caſtro ſeems to approve of the former reading, Vid. *L. De Febr. malign. punctic.* ſect. 1. aph. vi. Likewiſe, in the verſion of Jo. Cornar, the words *vibices culicum morſibus ſimiles* occur, Vid. *Aet. tetrab. ſec.* ſerm. 1. c. cxxix. It is to be obſerved, however, that the *petechiæ*, before being deſcribed by the Italians, had been obſerved by a celebrated French phyſician, Jacobus De Partibus, who died in the year 1463, or, according to others, 1465. For in his commentary on Avicenna (Tract 4. c. 2.), he has mentioned the ſpots, which ſupervene in acute fevers, like flea-bites. The paſſage is likewiſe quoted by Hieron. Mercurialis, *Prælect. Piſan. ad. Hiſtor. Hippocrat.* Hiſt. 2.

‡ Benign petechiæ of a roſy colour, and ſomewhat prominent, were obſerved in an epidemy that prevailed at Trent, an.

1591, by my townſman the very learned Roboret, *De Peticul. Febr. an.* 1591. *public. vagant.* c. xi.; and alſo in the petechial fever, which was obſerved at Vienna, an. 1758, by Haſenörhl, chief phyſician to the Grand Duke of Tuſcany; as alſo in the year 1771 and 1772, by Sagar, in another epidemy, *Syſt. morb.* claſs x. ord. 1. *Exanth. Contag.* gen. iv. But this is a fact of ſuch very rare occurrence, that were it not aſſerted by men of ſuch authority, I ſhould be ſtrongly inclined to believe, that theſe ſpots were not real petechiæ, but the miliary eruption, or the nettle-raſh, or meaſles, or ſome other eruption of a very different kind, interſperſed among the petechiæ, as theſe are very often combined with the petechiæ, when prevailing epidemically. It was certainly the miliary eruption which accompanied the petechiæ deſcribed by Pet. A Caſtro; and ſo diſtinct did he reckon the eruption, that he conſtituted two kinds of it, one of which he propoſed naming the *febris pulicaris*, the other the *febris culicaris*. And to paſs over the obſervations of our prdeceſſors, which are univerſally known, it will be ſufficient to make mention of a very recent inſtance of ſuch a combination, which occurred in the epidemy that prevailed in the year 1783, in the towns of *Belgiogoſum*, *Stratella*, and others lying along the Po. For in it the combination of the miliary eruption with petechiæ was a moſt frequent occurrence.

‖ They have probably got the name of *peſtichiæ*, on account of being moſt frequently obſerved in the plague, or becauſe they ſometimes approach more nearly to a peſtilential nature, from their malignity. Some, again, ſuppoſe them to be named *peticulæ*, as it were *pediculæ*, on account of in ſome meaſure reſembling the marks left by the bites of lice *(pediculi.)*. But why not derive this word alſo from *peſtis*, ſince by leaving out the letter *ſ peticulæ* is formed? Thus, probably from *peſtichiæ*, by a ſlight change, has proceeded the Italian word *petecchie*. For ſuch corruptions are very common among the vulgar.

309. The *petechiæ*, like the other exanthemata, (par. ii.), ſeem to require being divided into *pri-*

mary and *ſecondary* *. But I have already made ſuch frequent mention † of the *ſecondary* ones, both *critical* and *ſymptomatic* ‡, which ſometimes ſupervene, not only in continued fevers of all kinds, but likewiſe in intermittents, that they can have no diſcuſſion in this place. It therefore remains for me to ſpeak in particular of the primary ones, that is, the exanthematic febrile diſeaſe; although I am well aware that ſeveral late writers, as Cullen ‖, Macbride §, and other reſpectable phyſicians, exclude them from the exanthematic diſeaſes, and particularly Joubert ¶, who denies altogether that the petechiæ are ever primary, but always ſecondary, as being not unfrequently the ſymptoms of other diſeaſes, and particularly of malignant and epidemic fevers **. I ſhall ſhortly point out my reaſons for not agreeing in opinion with theſe authors, that I may not be ſuppoſed to have adopted an oppoſite one raſhly, or capriciouſly.

* V. Vol. i. *De Febr.* Par. 56.

† All petechiæ are divided into *critical* and *ſymptomatic*. But I find the word *critical* employed here improperly; for I obſerve that ſuch as adopt this diſtinction do not by it underſtand that which belongs to, or proceeds from a diſeaſe,—which is its proper acceptation,—but that it is employed juſt in the ſame ſenſe as *primary*. But, properly ſpeaking, *critical* and *ſymptomatic* is ſomething regarding a diſeaſe, or proceeding from it, not the diſeaſe itſelf, to which alone the term *primary* applies. I therefore think, that thoſe petechiæ are more properly called *critical*, or *ſymptomatic*, which are named *ſecondary*, as belonging to, or preceding any primary diſeaſe. Hence it

appears that the diſtinction into *critical* and *ſymptomatic* applies to the ſecondary petechiæ only. For that the diſeaſe can be both *primary*, and at the ſame time *ſymptomatic*, or *critical*, involves a complete contradiction. If any diſtinction, therefore, applies to the petechiæ, none is better adapted to them than that of the other exanthemata, as ſmall-pox, meaſles, ſcarlatina, &c. which are very properly divided into *benign* and *malignant*.

‡ Vol. i. *De Febr.* par. 177. 198. 382. &c. ‖ *Gen. Morb.* ord. iii. § *Theor. & Pract. of Phyſ.* vol. 2. c. xi. ¶ *Hiſt. de la Soc. Roy. de Mid.* an. 1776. p. 259. Paris, 1779.

** The arguments employed by Pet. J. Bergius (*Act. Acad. Scient. Suecic.* vol. xxviii. p. 326), to prove that the petechiæ are always ſymptomatic, are theſe: 1. The petechiæ have a very great reſemblance to the red miliary eruption, which is always ſymptomatic. So therefore are the petechiæ. 2. On the eruption taking place, the fever is not diminiſhed; nay, all the ſymptoms are aggravated. 3. Petechiæ do not break out in all perſons labouring under the ſame complaint; and in ſome, although they have broken out, they quickly diſappear, without any bad conſequence taking place. Some even have a ſucceſsful recovery before the diſappearance of the ſpots. 4. Cathartics and the cooling regimen are found highly ſerviceable in this eruption, in conſequence of expelling the putrid fluids, and checking putrefaction. Were the diſeaſe primary, both remedies would be hurtful; for they would oppoſe the eruption, or cauſe its ſtriking in, and thus give riſe to fatal metaſtaſes. Such are his principal arguments. But I think they may be anſwered in the following manner: 1. The reſemblance between the petechiæ and the red miliary eruption is not ſo great, ſince there is no ſmall diſtinction between them, as will appear evidently to any one who compares their deſcriptions: nor can the red miliary eruption always be called ſymptomatic, as is falſely aſſumed; and therefore no concluſion can be drawn from thence; nay, if any inference could be drawn, it would evidently follow, that the petechiæ, in the ſame manner as the miliary eruption, are not always in fact

obſerved to be ſymptomatic. 2. The fever, after the eruption of the petechiæ, is not diminiſhed; nay, its ſymptoms are not increaſed only when the petechiæ are ſymptomatic, but alſo when they are primary, and malignant. But it is diminiſhed, along with the other ſymptoms, at leaſt the chief of them, when, although ſecondary, they break out critically, or after concoction; or when, if they are primary, they follow the nature of the benign ones. 3. And it does not always happen that the petechiæ do not break out, or diſappear, when the diſeaſe is truly petechial, without injury, experince having ſhewn that an imperfect, difficult, and lingering eruption, and much more its ſudden retiring, at all times in the primary complaint, but principally in the ſecondary one, when it is to turn out critical, not only renders the diſeaſe more ſevere, but frequently even occaſions death, unleſs ſome other evacuation, as a diarrhœa, or copious diſcharge of urine, or ſweat, ſupply its place, in the ſame manner as happens when the ſmall-pox become depreſſed, or diſappear. If ever, therefore, an imperfect or defective eruption of the petechiæ, or its ſtriking in, is followed by no injury, it happens only in the ſymptomatic kind, not in the others. Nor ought it to appear ſurpriſing, that the petechiæ, in a ſtate of convaleſcence, ſometimes ſtill remain on the ſkin, as that circumſtance, ſo far from pointing out their ſymptomatic nature, rather demonſtrates that the petechiæ were either critical, or very mild, in ſo much that the fever diſappeared together with its ſymptoms before the eruption, as we frequently obſerve to happen in ſmall-pox, meaſles, and other eruptions, when of a mild kind. 4. Laſtly, with reſpect to the boaſted utility of purging, and the cooling regimen, it ought at firſt to be limited, as practitioners have frequently found, that cathartics, in certain petechial epidemies, have not only been ſuperfluous, but even highly dangerous; and the ſame thing applies to the imprudent, raſh, or indiſcriminate employment of the cooling regimen. Next, if it ever happens, as the author contends, that cathartics are found to prove ſerviceable in the petechiæ, the opinion of ſuch as acknowledge it to be a primary

complaint is not invalidated in conſequence of that, it being well known to all medical men, that the petechiæ, although primary, are ſometimes kept up by, or accompanied with dyſpepſia, ſo that the adminiſtration of purges becomes then not only neceſſary, but is even attended with ſalutary effects. But ſince the cooling regimen, as in all the other exanthematic diſeaſes, if properly employed, proves very ſerviceable, it is not ſurpriſing that it ſhould not be hurtful in the petechiæ, eſpecially when exceſſive heat of the blood, or too great tendency to colliquation, or putrefaction, require being checked. But with regard to the ſecondary and ſymptomatic petechiæ, as thoſe probably were which he once obſerved during the prevalence of malignant and putrid gaſtric fevers, I willingly own, that in theſe purging and the cooling regimen, ſo far from proving injurious, are highly ſerviceable, as they are known to be in other exanthematic diſeaſes, combined with dyſpepſy, or having a tendency to putrefaction; but it does not follow from thence, that the petechiæ ſhould be conſidered *as always ſymptomatic*.

310. The reaſons by which I am led to conſider the petechiæ as being inconteſtibly primary, are the following. And in the firſt place, it is to be obſerved, that the petechiæ, when they prevail any where epidemically, are not unfrequently obſerved alone, unaccompanied with fever, or any other diſeaſe on which they can depend; ſo that many people are obſerved going about their uſual occupations covered with theſe ſpots, without experiencing any inconvenience. In ſupport of this, I appeal to the authority of Pet. Sal. Diverſus *, Pet. A. Caſtro †, Joach. Burſerus ‡, Jo. Fantonus ‖, Strack §, Damilani ¶, and Duncan **, and all experienced practitioners who

have obſerved theſe ſpots by themſelves. Every body muſt name them primary. Nor ſhall I grant that theſe authors could have been deceived by the likeneſs of the eruption to petechiæ, while the patients were in fact affected with ſcorbutic ſpots; as I myſelf, whenever I have had an opportunity of ſeeing them, on the moſt careful examination have found, that they were real petechiæ, and that the perſons affected with them were otherwiſe perfectly healthy, and free from all ſuſpicion of the preſence of ſcurvy. Nor do theſe petechiæ occur alone only; but ſometimes break out a little before the fever comes on, and are afterwards ſucceeded by it, which may be likewiſe obſerved ſometimes in the other primary exanthemata.

* L. c. † *De Febr. Punct.* ſect. 3. aph. 32. ‡ *De Feb. Petech.* ‖ *De Antiq. et Prog. Feb. Miliar.* p. 70. § *De Morb. cum Petech.* c. 2. p. 19. where he obſerves: "I have likewiſe obſerved petechiæ, when they prevailed epidemically, unaccompanied with fever, or any other infirmity." ¶ *Nuov. Tratt. ſopro le Malatt. delle Migliar. in Piemonte, &c.* p. 131. Mondovi, 1774, 8vo edit. ** *Medic. Caſes, with Rem.* Lond. 1778. Hiſt. vii. and *Comment.* Lipſ. vol. 25. P. 2. p. 225. where the author makes mention of a particular benign petechial eruption, which terminated ſucceſsfully without febrile ſymptoms. A great many inſtances of petechiæ, unaccompanied with fever, are collected by Graff. Vid. *Diſſert. de Petech. ſine Febr.* Göett. 1775. Strack, alſo, has ſome hiſtories of the ſame kind, l. c. ægrot. 40. to 45. Likewiſe Diemerbroeck gives an account of a boy of ſix years of age, who laboured under petechiæ without any fever, *De Peſt.* l. 4. ægrot. 41. Laſtly,

Schlichtor conſiders theſe as real petechiæ, *Diſſert. de Petech.* p. 22.

311. In the ſecond place, it appears highly deſerving of notice, that this diſeaſe has a natural tendency to the ſkin, in the ſame manner as other truly exanthematic complaints, appearing there ſooner or later, and that ſometimes nothing can prevent it from proceeding to the ſurface. For it has been found, that ſometimes neither the moſt cooling regimen, nor bleeding, nor repeated purging, nor the admiſſion of freſh air, nor changing the cloaths, nor mixing ice with the drink, prevent the eruption from taking place *. But this fact holds ſo uniformly, that ſcarcely any of thoſe who are affected with the diſeaſe, when it prevails epidemically, remain free of the petechial eruption, whatever be the iſſue, whether the patient recover, or ſink under the complaint. And although one or two patients remain free from the petechiæ,—as I do not deny ſometimes happens, though very rarely,—we cannot conclude that the petechiæ, which have appeared in others, becauſe they were not common to all, are to be conſidered as ſymptomatic: for even in the very few inſtances in which the petechiæ are abſent, the diſeaſe is attended with juſt the ſame ſymptoms with which the petechial diſeaſe is accompanied, and yields to the ſame method of cure; and this I find confirmed by the additional teſtimony of Strack †. For as the *variolous fever*, or the *variolous diſeaſe unaccompa-*

nied with ſmall-pox, ſometimes occurs (302.), I ſhould not conſider it as at all abſurd to ſuppoſe, that the *petechial fever* may in like manner take place without petechiæ ‡.

* Sarcon. *Iſtor. Rag. de' Mali Oſſervat. in Napoli nel* 1764, P. 2. § 403. † L. c. p. 29. ‡ For the miaſma, the retention of which under the epidermis would have occaſioned the appearance of the petechiæ, may be diſſipated along with the cutaneous perſpiration. Hence it happens, that during the prevalence of the petechial diſeaſe, the fever, which gave riſe to the appearance of the petechiæ, ſometimes, eſpecially when the ſummer-heat comes on, continues to diſtreſs the patient, but is not accompanied with petechiæ, which, however, afterwards appear when the cold of autumn ſucceeds. The ſame thing happened in the petechial diſeaſe which occurred in the year 1783, as I have learnt from a ſecond letter of Pinaroli, which I have received.

312. In the third place, the fever accompanying the petechiæ, as the experience of almoſt all phyſicians, and particularly that of the very accurate Petrus A Caſtro *, informs us, is generally uncertain, variable, and anomalous; nor is it confined to any particular type, order, or genus: nay, it is ſometimes either wanting, or intermits, or ſeems to be wanting and to intermit, particularly when the diſeaſe has attained its height, ſo that it can by no means be conſidered as the principal diſeaſe; which will appear more clearly when its hiſtory is delivered. But that is a mark almoſt peculiar to the other febrile eruptions, when they are of the nature and hold the rank of a primary diſeaſe. In the fourth place, the petechiæ, beſides that they

break out in all patients, or at any rate in by far the greateſt number, as I have already ſaid, likewiſe appear ſooner in particular inſtances, generally about the fourth day, ſometimes even earlier; but very ſeldom, if ever at all, delay breaking out beyond the ſeventh day, unleſs they be very anomalous, while the ſecondary and ſymptomatic ones appear much ſeldomer, and in fewer patients, nay, very late, generally when the diſeaſe is far advanced, and drawing to its cloſe, or when it is about to terminate favourably, unleſs they be haſtened by the improper employment of the heating regimen, or heating remedies.

* *De Febr. Malign. Punct.* ſect. 1. aph. 1.

313. Laſtly, it is a certain fact that a ready, regular, complete, and generally diffuſed eruption of the petechiæ, and one of the proper duration, for the moſt part, when the diſeaſe is mild, has a favourable termination; nay, that in conſequence of it alone, without any other ſenſible excretion, the diſeaſe is intirely reſolved: and, on the other hand, that a difficult, imperfect, irregular, or lingering eruption, or its prematurely diſappearing, or not appearing at all, or retiring into the ſyſtem before the diſſipation of the morbid fomes, gives riſe to the very worſt ſymptoms, which frequently terminate in actual death: but this can never be affirmed of the ſymptomatic petechiæ. Add to this, that theſe petechiæ muſt go through certain ſtages, in the ſame manner as the other exan-

thematic complaints, beyond which, when the diſeaſe is ſimple, pure, and regular, it very rarely is prolonged. All which, if I do not very much miſtake, exhibit the marks peculiar to a primary diſeaſe ſo decidedly, that every unbiaſſed perſon muſt perceive the force of this truth. If any one, however, truſting either to the authority of his maſter, or to a few random obſervations, ſtill thinks otherwiſe, in order that he may change his opinion, he ought to witneſs ſome petechial epidemy, where he may have an opportunity of attending to the cures, of remarking and conſidering every particular with care, and examining the patient's ſkin in every caſe with the greateſt accuracy, and not remain content with the hurried and deſultory viſiting of one patient after another, but pay the cloſeſt attention to his patients during the whole courſe of the diſeaſe, nicely ſcrutiniſing all that befals them, and watching whatever is effected by nature or art, and all accidental occurrences. The ingenious Le Roy did not deny the exiſtence of *primary* petechiæ, but he probably did not conſider himſelf as ſupported by a ſufficient number of facts to remove all kind of doubt in his mind on the ſubject. But after obſerving the ſtationary petechiæ of the year 1764, and remarking all the ſymptoms which occurred in them, he immediately became more and more confirmed in his opinion, that the diſtinction between the primary

and ſymptomatic petechiæ is by no means an ideal one.

* *Prem. Mém. ſur les Fievr. Aigües*, ſect. 2. p. 213.

214. But although moſt phyſicians had obſerved thoſe primary petechiæ, they gave them their name from the fever with which they are generally joined, ſince at one time it put on the the appearance of a mild diſeaſe, at another that of a malignant and dangerous one, more or leſs fatal *. Hence they came to be known almoſt univerſally by the name of the *true*, or *purple petechial fever* †. In order that they might be properly diſtinguiſhed from the ſecondary and ſymptomatic ones. The primary petechiæ, whether they be conjoined with fever or not, are ſubdivided into *benign* and *malignant*; *regular* and *anomalous*; *ſporadic* and *epidemic*; *ſpontaneous* and *thoſe communicated by contagion*; into *endemic* in certain countries, and *adventitious*; into *contagious* and not *contagious*, and ſo forth; for they have been found to appear in all theſe ſhapes by careful obſervers. But as the petechiæ are at one time found to prevail alone and pure, at another time mixed and combined with other diſeaſes, particularly intervening ones, which are not always wanting, as they generally are when the plague itſelf prevails, and therefore, when they appear, ſcarcely remain free from the ſtationary or epidemic petechiæ; another diſtinction of them into the *ſimple* and *complicated petechiæ* ariſes. For they are ſometimes combined with other diſeaſes,

even at the beginning, in ſuch a manner that they can by no means be conſidered as ſymptoms of them. That is frequently manifeſt in the ſmall-pox, meaſles, and miliary eruption, with which the petechiæ are frequently combined, not to mention the plague itſelf, with which it is occaſionally conjoined; although more frequently in the plague the vibices and ſpots come under the claſs of ecchymoſes and gangrenes, and are eſſentially different from the petechiæ of which we are here treating, as effects and ſymptoms differ from a primary and eſſential diſeaſe. Nay, what appears ſtill more ſurpriſing is, that it not unfrequently happens that the petechiæ, ſmall-pox, and the miliary eruption, are found combined in the ſame body, and the ſymptoms peculiar to each are preſent, by which no doubt is left that all theſe diſeaſes have conſpired together.

* Le Roy, l. c. p. 212. † *Synonyms.* The *Febris Pulicaris* of Petrus A Caſtro, l. c. The *Febris Peticularis* of Octav. Roberet, *De Peticul. Febr. an.* 1591, *Public. Vagan.* c. 1. The *Febris Purpurata* of Riverius, c. 1. obſ. 22. and Jo. Coyttar, l. c. The *Febris Petechialis Vera* of Hoffman, *Med. Syſt.* T. iv. P. I. ſect. 1. *De Febr. Epid.* c. xi.: Of Platner, *Art. Med.*: and of others. The *Febris Putrida Maligna Petechialis* of Huxham, *De Febr.* c. viii. The *Febris Petechialis*, or *Peticularis*, or *Punctricularis*, or *Lenticularis*, of ſome authors, Le Roy, *Melang*, &c. *Prem. Mem.* p. 212. The *Malignant*, *Putrid*, or *Purple*, or *Petechial* fever of Buchan, *Dom. Med.* The *Peſtilential Fever of Europe* of the ſame author. The *Febris Exanthematica Maligna*, *Exanthematica Venenoſa*, and *Pernicioſa*, of Bianchini, *Lett. Med. Prat.* let. 4. p. 129.

315. It is certainly a very difficult matter to purſue the petechial diſeaſe through its different varieties (314.) in ſuch a manner as to exhibit a perfect view of the complaint. Nevertheleſs, in deſcribing it, it ſhall be my endeavour to give a brief and methodical account of the principal and more uſual ſymptoms, which either I myſelf have had an opportunity of remarking, or which have occurred to the obſervation of other phyſicians, particularly of our own country, when treating it while it prevailed epidemically in various parts. Certain ſymptoms generally precede the diſeaſe for three, four days, or more; ſuch as, heavineſs of the head, or an obtuſe pain in it, which is ſometimes ſtationary, at other times wandering; ſometimes likewiſe ſtretching to the neck, like a rheumatic one; at times more or leſs affecting the loins and joints, but in an irregular manner; loathing of food, or want of appetite, univerſal laſſitude; unuſual torpor; lowneſs of ſpirits; want of ſleep; reſtleſs nights; diſturbed ſleep; and ſometimes an uneaſy ſenſation, ſuch as is felt in bruiſed limbs, or when they are exhauſted with fatigue. In ſome caſes a ſhivering comes on about the loins, which, however, is but ſlight, and very quickly ceaſes, and is unaccompanied with any febrile commotion in the pulſe. But in ſuch patients as are oppreſſed with a colluvies in the *primæ viæ*, there is likewiſe a bitter taſte in the mouth, and the appetite is not only diminiſhed, but com-

pletely deſtroyed. Sometimes ſuch is the ſudden loſs of ſtrength, without any evident cauſe, that the patients can neither ſtand nor walk, nor ſit upright, and have a great diſpoſition to faint. But that happens only in the more ſevere and malignant caſes, and eſpecially when the diſeaſe has been communicated by contagion. And almoſt every body blames ſome error in the ſix non-naturals, eſpecially ſuppreſſed perſpiration, and immoderate exerciſe, as having given riſe to their illneſs

316. This doubtful ſtate of health is next ſucceeded by the fever, which generally commences with cold, ſhivering, or rigor: for it ſeldom comes on ſecretly, and all at once. When it begins with ſhivering, which is often ſlight, it generally recurs ſeveral times in the courſe of the day, eſpecially during the firſt days; and whenever the patient moves from place to place, or throws out his arms, he complains of the return, or aggravation, of the horripilatio. Nor does this happen during the firſt days only; but ſometimes alſo, during nearly the whole courſe of the diſeaſe, until it takes a turn, he continues occaſionally to be more or leſs affected with the ſhivering. But ſo various is the diſpoſition of the fever, that it can ſcarce be ſufficiently delineated. It frequently puts on the appearance of a mild diſeaſe, giving reaſon to hope that it will ſhortly terminate. In the epidemy which infeſted Italy in the year 1505 and 1528,

the complaint commenced its attack ſo mildly, that, according to Fracaſtor *, the patients would ſcarce allow a phyſician to be called; nay, ſeveral phyſicians themſelves were very much deceived by the appearance of mildneſs which the diſeaſe aſſumed, expecting a favourable termination, or a critical reſolution of it, ſhortly after to follow. It likewiſe occaſionally aſſumed a ſimilar appearance when it prevailed at Turin in the year 1720, as appears from Richa's deſcription †. For in each of theſe epidemies the fever, being in a ſhort time conjoined with the moſt ſevere ſymptoms, threw aſide its aſſumed appearance of mildneſs. But when the fever appears ſlight, although the heat is neither found to be great to the touch, nor does the pulſe depart much from its natural ſtandard; yet a certain kind of perturbation, laſſitude, and univerſal ſenſation, as if the bones were broken, heavineſs of the head, dulneſs of the ſenſes, the patient's lying on his back, and ſimilar ſymptoms, point out the malignity of the diſeaſe, which is rendered ſtill more manifeſt by the acceſſion of the eruption, and alienation of mind ‡. On the other hand, it is ſometimes ſevere and acute at the very beginning ‖; nay, it occaſionally attacks the majority of patients with great violence, without any conſpicuous and manifeſt acceſſion of fever, which occurred particularly in the diſeaſe which prevailed at Turin, even until the eruption took place §: at length, when it ap-

peared, the nature of the diſeaſe became perfectly evident.

* *De Morb. Contag.* l. 2. c. 6. † *Conſtit. Epid. Taurin. ann.* 1720. ‡ Fracaſtor, l. c. || Coyttar, l. c. c. 18. lib. i. p. 161. § Richa, l. c.

317. The fever in this diſeaſe generally obſerves the type of a continued remittent. But when the patients are affected with frequent ſhiverings, it reſembles the ſpecies named *phricodes*, and during the firſt two or three days is ſo obſcure and variable, that it does not certainly appear when it has an actual acceſſion, and when a remiſſion. Afterwards, however, if it does not aſſume a more diſtinct type ſooner, it becomes more manifeſtly remittent, ſometimes reſembling a ſimple quotidian, ſometimes a double tertian, and ſometimes being aggravated only every ſecond day, particularly on the even days, as happens in the tritæophyæ, and generally during the paroxyſms it excites ſome ſhiverings, and during the remiſſion ſweating. And there is ſometimes preſent turbid thick urine, ſo that it may readily be conſidered as a fever of the intermitting kind, or of the nature of the *ſubintrantes* of Torti. Sometimes it obſerves the type of a double quotidian, having two paroxyſms in the twenty-four hours, one before day-break, and the other in the evening: as I had an opportunity of obſerving particularly in the epidemic which prevailed at Fayence in the year 1759,

1760, and 1761 †. When it appears in the laſt manner, it is almoſt always combined with a true quotidian intermittent, ſo that it is compoſed of a continued remittent, and a true or ſpurious quotidian intermittent, as takes place in the *proportionatæ*.

* *Saggi di Medicina Pratic. di* P. Paolo, Dall' Armi, P. I. *nelle giunti*, p. 63. † *Ib.* p. 60. ‡ *Vid.* vol. i. par. DV.

318. Such are its principal changes when it obſerves the nature of a continued remittent. Not unfrequently, however, it puts on the deceptious appearance of an actual intermittent, particularly when it commences with cold, or ſhivering; as Pet. A Caſtro obſerved to happen in a particular epidemy which prevailed at Verona *, and not a few others after him. But after a few paroxyſms it throws aſide the aſſumed appearance of an intermittent fever, and paſſes into a continued one, on the fifth, ſeventh, or ninth day at fartheſt. Richa † has obſerved it run the courſe of an intermitting fever even for eleven days. But immediately on paſſing into the continued form, it ſhews the badneſs of its diſpoſition, which is proportioned to the length of time during which it had put on its fallacious appearance ‡. While, however, it reſembles an intermitting fever, or *ſubintrans*, particularly when the paroxyſms commence with cold or ſhivering, and are reſolved by ſweating, not only young practitioners, but even ſuch as are advanced in life, are led to believe that they can

quickly remove it by means of the bark ; which they notwithſtanding attempt in vain ; for even though it does intermit, it does not yield to the power of the bark. But although this gives frequent occaſion for committing errors, its true nature is not ſo much hidden as to baffle all attempts to detect it. Richa obſerves on the ſubject : " It never concealed its nature ſo effectually as to preclude all ſuſpicion of there being ſome deception in the caſe, and that an unlucky change would take place, either on the day of the intermiſſion, or remiſſion. For ſome complained of ſevere headach, others of exceſſive heat, and univerſal laſſitude. Some were thirſty, and remained long awake. Not a few were ſeized with ſuch profound ſleep that they could ſcarcely be rouſed ; and I do not remember that any of theſe laſt ever recovered ‡." To which facts if due attention be paid, and moreover if the petechiæ prevail epidemically, and have been preceded by ſpontaneous laſſitude, together with thoſe ſymptoms which are the uſual forerunners of ſerious diſeaſes, and particularly if the fever obſerve the type of a double quotidian, which is otherwiſe of very rate ocurrence, and a complete intermiſſion do not take place ; and if the return of the paroxyſms be irregular, or at leaſt not very regular, and the ſweats not only ſucceed the remiſſion, but accompany the whole paroxyſm, and do not intirely

terminate after it is finiſhed, while the urine does not appear ſufficiently lateritious; it may be known from the beginning that the fever is of a deceitful diſpoſition, and that no reliance is to be placed in the bark.

* L. c. aph. 2. † L. c. ‡ A hiſtory of the true petechial fever, which at firſt reſembled a double quotidian reſiſting the bark, and after the cold, with which its acceſſions began, and the ſweat, with which (as in the genuine intermittents), they ended, were obliterated, at length became a continued fever, may be found in a ſmall work of Jo. Vaſtapani, a diſtinguiſhed phyſician at Turin, entitled, *De China China in Synochis Animadverſiones*, p. 86. hiſt. 2. In the ſame author (p. 89. hiſt. 3.) likewiſe may be found an inſtance of the anomalous petechial fever, which at firſt was an intermitting tertian, and appeared to yield to the bark; but which ſhortly after returned in the continued form, without being preceded by any cold or ſhivering, and was at length accompanied with an eruption of petechiæ. It is to be remarked, however, that both theſe patients died in the hoſpital while the petechial diſeaſe prevailed epidemically. But the other hiſtories to be found in the ſame work ſeem to afford no ſmall grounds for ſuppoſing that the hoſpital-fever, which is generally petechial, might have ſupervened on the intermitting fevers, if they really were ſo before, from the patients remaining in the hoſpital, which is highly probable, as the fevers, which had an intermiſſion, yielded to the peruvian bark: for thoſe which ſhew a fallacious intermiſſion, and really do not depend on the fomes of intermitting fevers, reſiſt the power of the bark, as in fact the petechial fever does, which at firſt, as I have ſaid, aſſumes the appearance of an intermitting fever. For nature then ſeems, by repeated, but ineffectual efforts, which correſpond with the number of febrile acceſſions, to attempt the ſeparation and expulſion of the petechial miaſma, by which it is excited to the febrile motion: and I think it

probable, according as the irritability is more frequently or ſeldom affected by it, that theſe motions are more frequently or ſeldom excited, until, on the poiſon being completely evolved, the irregular and imperfect efforts ceaſe, and a continued fever ariſing, makes the exanthematic diſeaſe manifeſt. See alſo another letter of Pinaroli's, &c. ‖ L. c. § 21.

319. But the type of moſt frequent occurrence is that of the remitting quotidian. The fever is generally aggravated in the afternoon with ſhivering, ſometimes without it. The ſhivering is ſucceeded by heat, which often occaſions uneaſineſs to the patients, but is generally mild to the touch, and continues till morning, when it remits, and an univerſal ſweat comes on, attended with relief to the ſymptoms. This happened very frequently, eſpecially in the epidemic petechiæ, which my intimate friend and former pupil, Pinaroli, obſerved in the year 1783 prevailing at Piſtoia *. In ſome patients, however, there are almoſt conſtant ſweats, both at the beginning of the fits, and during their increaſe and remiſſion, flowing profuſely, warm, and univerſally diffuſed, proving of no ſervice, rather debilitating, as in the *elodes* and colliquative fever. This happens in particular when the miliary poiſon alſo is combined with the petechial diſeaſe. But then the ſweats, after a few days are paſt, are gradually diminiſhed, and frequently intirely diſappear. In the town of Belgiojoſum, when the petechiæ were lately

prevailing epidemically there, theſe ſweats were obſerved to continue ſometimes during the whole courſe of the diſeaſe, ſometimes were preſent at the beginning only, rarely towards the end; and although they are generally at that time attended with advantage, they are ſaid to have been almoſt uſeleſs in that epidemic †. It is to be obſerved, moreover, that according to the ſeaſon of the year, and the viciſſitudes of the weather, as well as the diverſity of temperaments, it aſſumes different appearances at different times. In the winter-time, for example, or when ſudden changes of the weather, from hot to cold, take place, or during cold moiſt weather, it aſſumes the appearance of rheumatiſm, pleuriſy, catarrh, or a running at the noſe, ſo that it may be taken by unſkilful people for an inflammatory, catarrhal, or rheumatic fever. In the ſummer-time, and in choleric temperaments, it frequently proceeds under the appearance of a bilious, ardent, colliquative, or putrid fever. Laſtly, according as it is conjoined with dyſpepſy, or worms, it frequently reſembles the ſpecies called *gaſtrica* and *verminoſa*, and is generally conſidered as ſuch.

* Targioni, *Racolt. d' Opuſculi medico-practic.* vol. viii. *Lettere intorno L'epidemia del* 1783, p. 260. † Trollius, *ibid.* p. 224.

320. Whenever the fever comes on, all the ſymp-

toms which had preceded it (350.) are aggravated, and ſome other ones, which more ſtrictly belong to the complaint, are added. The appetite, which before was only impaired, now leaves the patient altogether; the præcordia are oppreſſed with a heavy weight, and deep ſighing occurs. Greater laſſitude and loſs of ſtrength take place; the limbs become more torpid; a more acute pain is felt in the back and joints; and it is ſometimes ſo great, that the patient cannot remain long at reſt, but ſhifts about from place to place. There is generally a conſtant watching; and if ſleep ever ſteals on the patient, it is of very ſhort continuance, diſturbed with alarming dreams, and not refreſhing. In ſome patients, even at the beginning, coma comes on, and continues during almoſt the whole courſe of the diſeaſe. In other caſes, watching and deep ſleep alternate with one another. But the head, particularly the fore-head and ſinciput, is affected with more acute and diſtreſſing pain and heat, or at leaſt there is a great heavineſs in it. In theſe caſes, in which the headach and heat are greater, they are conjoined with a throbbing ſenſation, and more violent beating of the carotid and temporal arteries, than what is felt at the wriſts. But in other patients, although the headach be very ſevere, the temporal and carotid arteries beat in the ſame manner as at the wriſt, *i. e.* the pulſation is ſmall, weak, and not very frequent, which it was in the

epidemy which prevailed at the town of Belgiojoſum, as we are informed by the learned Trollius *. In other caſes, however, the head is affected only with vague and flying pungent pains; but in whatever manner it is affected, it is generally connected with a painful tenſion of the muſcles of the neck. In all the patients whom Cambieri attended laſt year, the headach was very acute and conſtant †. To the headach is added tinnitus aurium, and ſome degree of ſtupefaction. The face in moſt inſtances is ſwelled, full, and very red; and the redneſs, unleſs it was preſent at the beginning, at leaſt ſupervenes in the progreſs of the complaint, and particularly after the eruption of the petechiæ, and continues until the diſeaſe takes a turn, having the appearance of an eryſipelatous one. But it eaſily paſſes into a lead, or black colour, when the complaint is getting worſe. The eyes alſo are blood-ſhot, hot, painful at the bottom, and impatient of light. In many caſes there is intenſe thirſt, although the tongue appears moiſt and red; in others there is none, even when the tongue is parched, rough, and covered with aphthæ, which was univerſally obſerved to take place in the petechial epidemy which occurred lately ‡. The heat is generally uneaſy internally, and mild externally; in ſome caſes it is even acrid and pungent to the touch ||, particularly during the increaſe of the paroxyſms, or when they

are unuſually ſevere. Sometimes, however, the ſkin externally appears ſo temperate as to feel cool to the touch. Likewiſe ſlight delirium is preſent, particularly at night, when the violence of the fever is greater. Frequently the drink is rejected by the patients, becauſe the uneaſineſs of the weight in the epigaſtric region is increaſed by it. The reſpiration is generally regular; ſometimes it is frequent, laborious, and interrupted with ſighs, but not warm, as it is in peripneumony. Sometimes it is accompanied with a pain of the ſide, which is always attended with a cough and ſpitting of blood; but it frequently proceeds from the ſpaſms, and is unconnected with inflammation. It, therefore, either ſoon departs ſpontaneouſly, or is removed by a ſingle bleeding. This was not an unfrequent ſymptom at Fraſcarolum, as I have learned from a letter of my former pupil, the ingenious Maurus Angiolini §. Dyſpepſy and worms are frequently conjoined with the petechial diſeaſe; when that happens, the tongue is covered with a white or yellow mucus; a bitter taſte of the mouth, nauſea, vomiting of bile, pain of the epigaſtrium, ſometimes hiccup, conſtant flatus, and frequent borborygmi, diſtreſs the patients. The ſame ſymptoms were experienced laſt year at Piſtoia, while the moſt intenſe thirſt, accompanied with a mucous covering of the mouth and fauces, ſometimes white,

ſometimes yellow, and a dreadful headach, were preſent ¶.

* *Lettere intorno l'Epidemia del* 1783. Vid. *Raccolta d'Opuſcul. Medico-Pratici*, vol. viii. p. 240. † *Ibid.* p. 284. ‡ Trollius, *ib.* p. 223. || Carol. Pinarolius, *ib.* p. 261. § *Ib.* p. 290. ¶ Pinarolius, *ib.* p. 260.

321. The pulſe is very variable. On the whole, it is ſmall, weak, low, ſoft, irregular, and not quick, and continues ſo during the whole courſe of the diſeaſe. In ſome patients it is raiſed and full during the increaſe of the paroxyſm; in others, during its increaſe, and at its height, it becomes ſmall, but obſcure and low. At the beginning of every acceſſion it is depreſſed and quick, but at its increaſe it is generally ſomewhat more raiſed and ſtronger, but without that force and hardneſs which is commonly diſcoverable in inflammatory diſeaſes. Sometimes during the whole courſe of the diſeaſe it is ſtrong, great, frequent, and hard. That happens particularly in certain ſeaſons, in ſanguine temperaments, and robuſt habits, whether it depends upon an inflammatory diatheſis, or ſome acrid principle, by which the vital powers are ſtimulated. Sometimes the pulſe is ſlow only at the beginning, but after the firſt days, or on bleeding being employed, it becomes languid, ſmall, low, tremulous, and irregular; nor does it riſe higher, or become ſtronger, until the diſeaſe is approaching to its declenſion. The belly is generally bound,

ſometimes it becomes looſe, and thin, acrid, fetid ſtools come off, ſometimes of a green colour, ſometimes reddiſh, or yellow, or black, and a great number of lumbrici are frequently paſſed along with them, which happens principally when the diſeaſe is accompanied with, or kept up by, a colluvies in the *primæ viæ*. I have ſometimes ſeen ſtools of a cineritious kind, ſometimes bilious, or ſerous, and fetid, attended with a frequent and uneaſy deſire to go to ſtool, together with borborygmi. In ſome caſes the belly remains regular, without receding from its natural ſtate. In others, ſuch is the propenſity to colliquation, that the mildeſt medicine cauſes a moſt ſevere looſeneſs, from which the patient receives much injury. The blood which is let at firſt is generally of a natural colour and conſiſtence; ſometimes it is red, and without ſerum; ſometimes it is covered with a yellow and mucous pellicle, while the craſſamentum is lax, and ſcarcely coheres, and the ſerous part yellowiſh or green; frequently, eſpecially in the pernicious kind of the complaint, it is black, acrid, and has a ſtrong tendency to colliquation; when drawn a ſecond time, it is thin and diſſolved, floating in a great quantity of dark ſerum, ſcarcely concreting, and quickly becomes corrupted and colliquated. In the epidemy which prevailed at Modena in the years 1692, 1693, and 1694, both that which was taken by the lancet, and that which

was brought away by cupping-glaſſes, or leeches, or which flowed ſpontaneouſly from the noſe, in general appeared of a good kind, but of a very bright red. Nor did the blood drawn from any patient, of whatever temperament or habit of body he was, ſhew the inflammatory gluten, and pleuritic coat *. Richa obſerved the ſame thing in the diſeaſe which prevailed at Turin, for the blood in all the patients was very prone to colliquation and putrefaction †. Inſtances, however, are not wanting of truly inflammatory blood having been diſcovered, not only at the beginning, but alſo in the courſe of the complaint, even until the twelfth day, and upwards ‡; although, when it has attained its height, and is farther advanced, that which at firſt appeared tenacious and firmly cohering, becomes very apt to colliqueſce. Nor is it an unfrequent occurrence for the breath to become fetid, and the ſweat, perſpiration, and the other excretions, to exhale a putrid ſmell. On the other hand, ſometimes the blood which is firſt drawn appears not only red, but alſo diſſolved, but at the ſecond or third bleeding it is frequently found to exhibit a firmer buffy coat ‖.

* Ramazzini, *Diſſert. de Conſt. an.* 1692, 1693, & 1694. † L. c. ‡ Dall' Arm. *Sagg. di Medic. Prat.* P. I. *nelle giunte Conſt. Epid. del* 1750, e 60. p. 71. Haſenöhrl, *Hiſt. Feb. Petech. an.* 1757, 1758, & 1759. *In Waſſerbergii Faſcic. Prim. Oper. Minor. Medic. et Diſſert.* p. 277. De Haën, *Rat. Med.* part 4. c. 6. ‖ Haſenöhrl, *ibid.*

322. Such in general is the firſt ſtage, which continues with all its ſymptoms until the eruption of the petechiæ takes place, with which the other begins. But on the preceding day, or night, an aggravation of all the ſymptoms generally takes place, particularly the anxiety, reſtleſſneſs, and dyſpnœa, and the pulſe ſometimes becomes ſomewhat hard and contracted, and, if they are not already preſent, tremors of the hands, ſtarting of tendons, delirium, and the like, ſupervene. Sometimes hiccup, or vomiting, precedes *. Next the petechiæ break out, that is, between the fourth and ſeventh day, which is the moſt uſual period †. They have ſometimes, however, been obſerved to break out much ſooner, either before the acceſſion of the fever itſelf, which I have already remarked, or on the firſt or ſecond day after its invaſion; on the other hand, it happens at times much later, namely, on the ninth, eleventh, or fourteenth day; but that is the caſe only when the complaint is difficult, long protracted, and anomalous. They generally appear on the neck, breaſt, back, arms, and legs, namely, in thoſe parts which are nearer the heart, or through which the principal veſſels paſs. But when the eruption proceeds properly, it attacks every part in ſucceſſion, to the very ſoles of the feet, the petechiæ which broke out firſt gradually diſappearing, and being in the mean time ſucceeded by others in parts of the body till then not affected

by them †; nor do they always leave the face quite free. Pinaroli of late only twice obſerved them break out in his patients on the nates and legs ‖. We are informed by Sagar, that in puerperal women, the thighs, nates, inguina, and abdomen, and next the breaſt and arms, are affected with them, the order being almoſt the reverſe of that which commonly takes place §. They ſometimes lurk under the epidermis, ſcarcely perceptible, and are only ſeen through it on attentive examination; whence I imagine it frequently happens, that ſome have haſtily concluded that they were abſent, when they were actually preſent. Nay, they ſometimes do not appear, unleſs cupping-glaſſes be applied, by which they are called out. For they frequently appear only where the ſkin, in conſequence of the application of cupping-glaſſes, has become ſwelled, and is rendered finer. Laſtly, they occaſionally at one time appear, at another diſappear; thus repeatedly coming and going, which is generally a bad prognoſtic mark.

* Störck, *Ann. Med.* 1. *menſ. Sept.* 1758, p. 29. *et Dec.* p. 42.

† All thoſe who have deſcribed the epidemic petechiæ unanimouſly agree with me. But in particular may be conſulted the moſt ſimilar deſcriptions, as being taken from nature; I mean thoſe of Fracaſtor, l. c.; of Pet. A Caſtro, l. c.; of Roboret, l. c.; of Ramazzini, l. c.; of Richa, l. c.; of Trogher, Dall'Arm. *Sagg. de Med. Prat.* P. I. p. 20. & 28.; of an anonymous writer, who deſcribes the petechiæ of the year 1764, *ib.* p. 15.; and of Tozzetti, *Relaz. delle Feb. ec. del.* 1767, p. 89.; and, to paſs over a great liſt of others, of Trollius, Pinaroli,

Cambieri, Angiolini, Pizzorni, the lateſt of our countrymen who have deſcribed them; Targioni, *Rac. d' Opuſc. Med. Prat.* vol. viii.; to which may be added, to ſuperſede many others, the deſcriptions left by Haſenöhrl, *Hiſt. Med. Febr. Petech.* and Störck, *Ann. Med.* 1. & 2. ‡ Ramazzini, l. c. § 19. and Richa, l. c. § 12. ‖ L. c. p. 261. § L. c. cl. x. ord. 1. gen. 4. ſp. 4.

323. But as the petechiæ vary in ſize, ſometimes reſembling ſmall points, ſometimes flea-bites, ſometimes lentils, ſometimes appearing as large ſpots; they alſo differ much in colour. But they are generally of a red or ſcarlet colour, ſometimes of a violet, or they are livid, or yellow, or brown, or pale, and ſometimes, though very ſeldom, perfectly black. I have already mentioned that the petechiæ are often like flea-bites, from which, however, they are eaſily diſtinguiſhed, becauſe they have not the mark of the wound or puncture in the centre, which is indelible, although it is compreſſed or rubbed, while the reſt of the ſpot left by the flea-bite diſappears, or becomes white, by preſſure. In which reſpect they are ſufficiently diſtinguiſhed from the petechiæ; for the latter remain unchanged, either by preſſure, or by any other means. But if it appears ſtill doubtful whether the ſpots be petechiæ or flea-bites, ſome adviſe them to be rubbed with the flower of beans, mixed with vinegar, for they ſay, that in this way the flea-bites are immediately made to diſappear. But when the eruption of the petechiæ

is ſo great, that almoſt the whole ſkin appears covered with them, frequently ſome much ſmaller ones are interſperſed among them, which in ſome meaſure reſemble the pricks of a needle. They are generally diſtinct; ſometimes, however, they run together, and form large ſpots. If they make a perfect circle, they are named *circumſcribed*; if, on the other hand, they ſpread out, they are called *diffuſe*.

324. Laſtly, the petechiæ differ from the other exanthematic ſpots, eſpecially thoſe which occur in the miliary eruption, in the nettle-raſh, and meaſles, becauſe they neither riſe above the ſurface, nor render the ſkin rough, nor are they attended with itching pain, or ulceration, nor do they fall off in ſcales, but are gradually reſolved. On which account I can by no means agree with Petrus A Caſtro, who makes no diſtinction between the petechial ſpots, or, as he calls them, the *maculæ pulicares*, and *papulæ culicares*, or thoſe reſembling the bites of gnats*; for in thoſe laſt there is both a certain elevation, which in Italy is commonly called *tacche*; and certain veſicles, or ſmall ſpots, both red and white, which are now called miliary, are not only diſcernible by the eye, but may be felt. Le Roy alſo obſerves †, that there is ſome diſtinction between the primary and ſecondary petechiæ, which conſiſts in the difference of their colour; namely, that the former are of a paliſh red and roſy co-

lour, and in general break out in great numbers, principally on the loins and legs; that the latter, on the contrary, are generally of a purple colour, like deep red wine, and are ſometimes alſo brown, or black, and fewer in number. But we muſt alſo remember that the primary ones break out ſoon, and when they are epidemic, appear not only in all affected with the ſame diſeaſe, but are likewiſe very frequently combined with other diſeaſes, called *intercurrent* ones; for theſe laſt are not always wanting, as ſome improperly contend: while, on the other hand, the ſecondary ones break out later, and generally about the height, or towards the end of the diſeaſe, and not in all patients, but only in thoſe whoſe blood is ſo vitiated as to become almoſt putrid, and occaſion gangrenes here and there on the ſkin; or being thrown into violent commotion by a heating regimen and medicines, is effuſed into the ſpaces of the ſkin, but not by the wiſdom of nature endeavouring to free herſelf from the noxious miaſma. Hence I would ſay, that the primary differ from the ſecondary petechiæ, becauſe the former ariſe from a peculiar and poiſonous miaſma, and the latter from the craſis of the blood being deranged by the violence of the diſeaſe, or from its increaſed motion, or, laſtly, from a heating regimen having been employed. But concerning the ſeat of the pete-

chiæ, I can by no means agree with Diemerbroeck ‡, who appeals to anatomy, nor the other great men who adopt his opinion, alleging that it is ſituate in the internal parts, as the fat, muſcle, and perioſteum, as if the petechiæ formed a cone whoſe baſe was ſituate at the bones, while its apex terminated at the ſkin. I grant that this may perhaps be affirmed of the vibices and other gangrenous ſpots, which are uſually obſerved in ſuch as have died of the plague; but it cannot be ſaid of the petechial diſeaſe, in which the petechiæ, unleſs they be combined with internal gangrene, never deſcend beneath the ſkin §. For whatever gives riſe to them, is contained in the very minute and diſtinct cells lying under the epidermis.

* L. c. ſect. 1. aph. vii. † L. c. ‡ *De Peſte*, l. iv. *Hiſt.* 32. § They ſeem to have been gangrenous ſpots and vibices, which Stoll tells us, on being opened with a lancet, poured out their extravated fluid, or which had penetrated to the whole ſurface of the ſkin, or to the fat, nay, to the very muſcles, like the cone of Diemerbroeck; *Rat. Medend.* P. 1. ſect. cadav. 8. p. 199. 200. It muſt not be denied, however, that likewiſe the internal viſcera have ſometimes been found covered with petechial ſpots, as appears from the obſervations of anatomiſts; but in that caſe they have no communication with the external ones.

325. After the eruption of the petechiæ, if they are benign (314.), the fever ſomewhat abates; the anxiety, and difficulty, or irregularity, of the breathing ceaſes; the hiccup and deſire to vomit,

if they are preſent, not proceeding from a gaſtric colluvies, but from mere irritation of the nerves, are allayed; the pulſe riſes and becomes ſtronger; and the other ſymptoms are mitigated. At leaſt the pains of the joints and back are ſo much allayed, that the patients complain leſs, and appear almoſt free of them *. Fracaſtor, in the year 1528, obſerved that a copious eruption proved ſalutary; and, on the other hand, that a ſparſe one, or one which, after breaking out, lurked in the ſyſtem, proved the reverſe †. Ramazzini, in the diſſertation already quoted, mentions that the eruption was attended with relief to all the ſymptoms, when it appeared gradually over the body ‡. In the diſeaſe, as it prevailed at Fayence in the years 1759 and 1760, when the petechial ſpots broke out in great numbers, and were broad, of a deep red colour, and univerſally diffuſed they afforded the greateſt relief ‖. Störck alſo, when he obſerved a ſcanty eruption of the petechiæ take place on the fourth day, firſt on the neck, breaſt, and pit of the ſtomach, and next, after being preceded with new anxiety, extend in great numbers all over the body, aſſerts that the ſevere ſymptoms "almoſt always" diſappeared, or at leaſt became much leſs dangerous §. The ſame experienced practitioner in another place mentions, while a few ſpots appeared on the third day, but a ſtill greater number on the fourth, attended with relief, and others again broke out on the ſeventh, that

the patients received the greateſt advantage from them ¶; and again, that when a few ſpots broke out on the ſixth day, and more on the ſeventh, a favourable criſis happened on the eleventh **. Haſenöhrl makes ſimilar obſervations on the benign petechiæ, as will be ſhewn in its proper place ††. It ſometimes happens that for a few days after the eruption all the ſymptoms ſeem relieved, but that the fever is ſuddenly, as it were, again aggravated; the anxiety at the breaſt returns, the mind becomes deranged, and the ſleep is baniſhed; all of which ſymptoms at laſt are relieved again by the miliary eruption breaking out on the ninth, eleventh, fourteenth, or ſeventeenth day, and the diſeaſe is frequently reſolved by that excretion. This lately happened in not a few inſtances at Belgiojoſum and Stratella ‡‡. The hiccup which remained obſtinately for a fortnight after the eruption, Störck mentions to have been removed by a very copious miliary eruption at length taking place ‖‖. Sometimes, likewiſe, although ſome ſymptoms are relieved on the appearance of the petechiæ, the pulſe does not riſe, but remains, as formerly, low, weak, and ſmall, the ſtarting of the tendons is increaſed, the delirium after the ſeventh day becomes more manifeſt and violent, or coma is ſubſtituted in its place; from which ſymptoms, as Trollius properly remarks, ariſes an intermediate kind of complaint, between the mild and malignant, of very doubtful iſſue §§.

* Trollius, l. c. † *De Morb. Contag.* l. 2. c. 7. ‡ L. c. || Dall' Armi, *Sagg. di Med. Prat.* l. c. § *Ann. Med.* 1. *menſ. Aug.* 1758. ¶ *Ann. Med.* 1. *menſ. Mart.* 1759. p. 63. *ed. Amſtelod.* ** *Ibid.* †† L. c. c. 2. ‡‡ Trollius, l. c. and Selicorn, *ib.* ||| L. c. *menſ. Sept.* 1758. p. 29. §§ L. c.

326. But if the petechiæ are of the kind which I have named *malignant* (314.), on the eruption taking place, ſo far from its affording relief, as in the malignant ſmall-pox, all the ſymptoms are aggravated except the reſpiration, which, if the diſeaſe is not very fatal, generally becomes freer and more equable than before. But the fever is increaſed; the pulſe becomes more and more depreſſed, irregular, ſometimes intermits, ſometimes is ſlower than uſual; the hands tremble, frequent twitching of the muſcles and ſubſultus tendinum come on; there is an incipient delirium, or, if it is already preſent, it becomes more manifeſt and furious; the eyes are red, and ſometimes pour out tears; the throat is ſore, and ſometimes ſuffuſed with an eryſipelatous redneſs, or is ſometimes affected with real angina, rendering the deglutition and reſpiration difficult; the tongue, which was before moiſt, ſoft, and red, immediately, or in a ſhort time, becomes white or yellow, next black and dry,—if it is not ſo already,—it grows rough and cracked, and is frequently covered with aphthæ, which affect likewiſe the lips; the breath has a putrid ſmell; the teeth, particularly, and the lips, are co-

vered with a filthy matter, which is ſometimes black; the delirium is accompanied with coma, which at one time is ſhort and tranſitory, and ſucceeded by watching, phrenitis, and convulſion; at another time is permanent, and attended with ſtupor, and total inſenſibility of the ſtate in which they are. But, as Fracaſtor has already remarked *, it is almoſt an uniform ſymptom of malignity when the patients remain on their back, on account of extreme debility †, anxious and dejected, and in full expectation of their latter end; or too confident, and thinking themſelves in good health. But it is a much worſe ſign, if, as Ramazzini obſerved in the diſeaſe at Modena ‡, they immediately diſappear again on breaking out; for the ſtrength was then completely exhauſted, the pulſe, as in aſphyxia, was intirely wanting, the whole body was cold, the ſecretion of urine was interrupted; and theſe ſymptoms were ſoon followed by death.

* L. c. † Coyttar obſerves, that ſome patients, even when completely covered over with petechiæ, walk erect; that others can neither ſtand nor walk, and yet do not remain quiet in bed, but are conſtantly toſſing themſelves about; and, if they remain in bed, burn with much greater heat. Hence they think they ſuffer leſs when ſitting in a chair, or walking about. ‡ *Diſſert. Cit.*

327. To theſe ſymptoms are gradually ſuperadded, deafneſs, and ſometimes likewiſe a cough, at one time dry, at another moiſt, and next in

ſome caſes the breaſt is oppreſſed with ſlow, great, or irregular reſpiration; or that which is frequent, ſhort, and accompanied with ſighing, which is a highly dangerous ſymptom. I have ſometimes, however, obſerved the breaſt become oppreſſed, by which the head is ſuddenly relieved, and, on the other hand, the oppreſſion of the breaſt ceaſing, ſucceeded by ſwelling and tenſion of the abdomen *, ſometimes painful to the touch, at other times unattended with pain; in ſuch a manner that the force of the diſeaſe ſeemed to be transferred from the upper parts of the belly to the lower. I find a ſimilar obſervation in Sarcon, ſpeaking of the epidemy which prevailed in the year 1764 at Naples. Laſt year this tympanitic ſwelling of the belly occurred in almoſt every caſe in which the diſeaſe had attained its height; and becauſe the petechiæ were commonly conjoined with depravation of the chyle in the *primæ viæ*, it was generally ſuppoſed to ariſe from the retention of putrid ſordes. But the ſame ſymptoms likewiſe ſupervened in thoſe patients whoſe belly had been ſeveral times purged, or in whom it was ſufficiently open of its own accord, while a copious diſcharge of urine took place †. In that caſe, did the air, which was retained in the inteſtines, in conſequence of the ſpaſms, and had become rarefied, occaſion the ſwelling? Generally, however, the ſecretion of urine was diminiſhed at the time the belly began to

grow tenſe ‡. In all the patients a great quantity of air filled the inteſtines; which was occaſioned ſometimes by the bound belly, or by the congeſtion and putrefaction of the fæces, as may be learnt from the obſervations of Frambaglia ‖. In the town of Belgiojoſum, this ſwelling did not appear until the heat of the month of May had relaxed the ſolids, and prediſpoſed the fluids to putrefaction. I have already obſerved, that ſometimes there is no thirſt preſent, even when the fauces and mouth are parched (320.), which muſt certainly be aſcribed to impaired ſenſibility. In this ſtage, however, although the thirſt is very great, accompanied with dryneſs and roughneſs of the tongue, the patients frequently reject all drink, becauſe the ſtomach is very much deranged by it; and if they are in ſome degree impelled to drink either by force or perſuaſion, they immediately throw it up. Laſt year, wherever the complaint prevailed §, it was generally obſerved to occur, but much more manifeſtly and uſually in all the patients who laboured under the complaint at Fayence in the years 1759 and 1760, in ſo much that one would have pronounced them to have been affected with hydrophobia ¶. Such was the tendency of the ſtomach to ſpaſm, that they fell into convulſions on touching any thing liquid, and every thing they drank was immediately rejected.

* Dall' Armi, *Sagg. di Med. Prat.* l. c. † Trollius, l. c.

‡ *Id. ib.* ‖ Targioni, *Raccolt. d'Opuſc. Med. Prat.* T. viii. § *Ibid.* ¶ It is a well-aſcertained fact, that hydrophobia does not always ariſe from the poiſonous bite of a rabid animal. An inſtance of hydrophobia ſucceeding to inflammation of the ſtomach, and being cured in conſequence of repeated bleedings, is mentioned in the Tranſactions of the Royal Society of Edinburgh, vol. i. art. 29. Two hiſtories of ſpontaneous hydrophobia are adduced by Tronchini; *De Colic. Pictон.* c. xvi. obſ. 1. & 2. p. 49. See other caſes in *Ephem.* N. C. cent. iii. obſ. 50. *Comm. Norimb.* 1740, hebd. 36. n. l. an. 1743. hebd. 5. n. 2. *apud* Sanchez, *Op.* T. i. p. 375. Dom. Brogian. *De Venen. Anim.* p. 105. *Journ. de Méd.* 1757. *Fevr. & Ivin*, 1767. *Nou. Swiet.* V. iv. § 1130. Likewiſe a caſe of hydrophobia ariſing from convulſions, very elegantly deſcribed and publiſhed by Jo. Bapt. Faletus, a diſtinguiſhed phyſician in Urbinum, is highly worthy of being recorded. See his letter, *De Raro Morbo Hyſterico, in Diario Medico*, Petri Orteſchi, vol. v. A particular kind of hydrophobia alſo frequently occurred in the epidemy of the year 1764, deſcribed by Sarcon.

328. On the eruption taking place, when, as I have ſaid, all the ſymptoms are aggravated, the increaſe and height of the complaint, as it appeared laſt year at Piſtoia, were indicated by the following ſymptoms: the cold and ſhivering, with which the evening fits recurred, diſappeared intirely; the whole period became obſcure, and although in the evening the pulſe was much quicker compared with what it was in the morning, yet the diſtinct change of the paroxyſms and remiſſions, which was remarkable before, became much leſs diſtinguiſhable. Nor is it ſurpriſing, ſince I have frequently obſerved the fever in theſe complaints, about the increaſe and

height, loſing its period intirely, become continued; nay, ſometimes I have obſerved the pulſe, from being quick, become ſo ſlow that one would have believed that the febrile motion, at leaſt as far as the pulſe indicates it, had intirely ceaſed. The watching, moreover, to return to the deſcription, was of longer continuance, the ſleep very ſhort, diſturbed, laborious, and not refreſhing, the patients ſtarting out of it terrified, and delirious; the belly was ſwelled, and attended with an almoſt total ſuppreſſion of the urine; the reſpiration was ſomewhat injured, the deglutition difficult and painful; there was a ſlight degree of inflammation of the fauces, ſometimes attended with aphthæ, the eyes were painful and languid, ſometimes red, ſometimes wild and fixed; the patients lay on their back; ſtupor, lethargy, and ſubſultus tendinum were preſent; they breathed with their mouth open; the colour of the face was yellow; and to theſe ſymptoms were added tinnitus aurium and deafneſs *.

* Pinaroli, l. c.

329. In which caſe Fracaſtor mentions, that the diſeaſe is prolonged at one time to the ſeventh, at another to the fourteenth day, and ſometimes, even beyond it. In that which prevailed at Fayence, to which I have already alluded, attended with theſe ſymptoms, or at leaſt moſt of them, it continued to the ninth, eleventh, fourteenth, or

ſeventeenth day. At length, when the patients were affected with uncommon ſeverity, univerſal convulſions ſupervened, together with the riſus ſardonicus, aphonia, and laſtly, death, which generally happened towards the end of the ſecond week, or about the beginning of the third. Hoffman * thinks, that moſt of thoſe who die, are cut off in conſequence of gangrenous inflammation of the ſtomach, inteſtines, and other viſcera, or phrenitis, or anginous aphthæ, affecting the fauces, œſophagus, or larynx. Frequently the membranes of the brain are found to be of a dark colour, their veſſels diſtended with black blood, and the cortical part of the brain ſomewhat livid; the ſtomach and inteſtines ſwelled, hard, and black; the pancreas, liver, and meſentery, enlarged †. In patients who have been cut off by hiccup, the ſtomach frequently abounded with black ſpots ‡. In others, the veins and the membranes of the brain were varicoſe, the lungs gangrenous and ſphacelated, and the blood in the cavities of the heart black and diſſolved ‖. Sometimes alſo abſceſſes of the brain are preſent, as well as of the breaſt, or abdomen. Very frequently, however, no viſible taint is diſcovered any where which can be conſidered as the cauſe of the patient's death. It then appears highly probable, that the brain and nerves at leaſt, or the irritability of the heart, have been affected by a poiſonous, ſubtile, and unknown principle.

The external ſurface of the dead bodies is generally here and there disfigured with broad ſpots, of various forms, and of a violet, livid, or black colour. But ſo prone are they to putrefaction, that they corrupt in a very ſhort time, and emit an exceeding foul ſmell. Ramazzini§ was very much ſurpriſed to find the bodies after death full of juice, not emaciated, and the features not ſhrivelled.

* L. c. c. xi. § v. † Dall' Arm. *Sagg. di med. prat.* P. 1. p. 19. ‡ Ramazzini, l. c. § 22. ‖ Trogher, *apud* Dall' Armi, l. c. p. 25. § Ramaz. l. c.

330. But when the diſeaſe is leſs deadly, and may be overcome by the power of nature or art, towards the ninth, eleventh, or fourteenth day the ſymptoms are diminiſhed, the head is relieved, the ſenſes are reſtored, the ſubſultus tendinum is allayed, and the reſpiration becomes natural; if there be any phlegm in the lungs, it is concocted and expectorated; the fever abates daily; the pulſe becomes more uniform, calm, and raiſed; and the eyes and face reſume their former ſhining and chearful appearance. The urine, which was before crude, or ſcanty, or of a dark colour, turbid, and lateritious, or like healthy urine, and putting on the fallacious appearance of concoction, gradually becomes clear and more copious, generally without having any ſediment, ſometimes having a thick, white, heavy one, and remains ſo for ſeveral days even after the fever has ceaſed. The

belly is generally looſe, much bilious, concocted, fetid matter being paſſed, accompanied with great flatulency. On which the abdomen, if it was tenſe or ſwelled before, ſubſides, and becomes ſmooth. But if a looſeneſs was preſent, as frequently happens when the *primæ viæ* abound with ſordes, or the acrid humours flow from all parts to the inteſtines; the ſtools remain bilious, yellow, and thin, but from being thin, watery, and very fetid, become of the conſiſtence of pottage, thicker, more concocted, leſs fetid, and leſs frequently paſſed, and remain ſo for ſeveral days, until they regain their natural colour and conſiſtence. Sometimes worms are paſſed along with them, and a warm, uniform, refreſhing ſweat breaks out all over the body, and thus the diſeaſe is ſlowly and favourably reſolved towards the end of the ſecond, third, or fourth week at fartheſt; which variety of duration frequently depends on the greater or leſſer degree of vitiation of the chyle with which the diſeaſe is combined, ſo that ſometimes in conſequence of this, and its combination, it may be prolonged for thirty or forty days, or five or ſix weeks. But its moſt frequent duration is from fourteen days to three weeks.

331. In not a few patients, the complaint terminates merely by inſenſible reſolution, and as it were imperceptibly vaniſhes. Several recovered in this way at Pavia, Belgiojoſum, and elſewhere *. Trollius never obſerved a perfect cri-

ſis, and not even an imperfect one to take place †. Ramazzini alſo, to whom the moſt implicit credit is due, mentions, that the peaſantry about Modena, recovered in conſequence of the eruption of petechiæ having taken place all over the body to the very feet, and ſlowly departing, without any other excretion ‡. Roboret denies that the mere eruption of petechiæ was ſufficient to reſolve the diſeaſe, unleſs a copious diſcharge of urine, or ſweat, or diarrhœa, had come on ‖; but in that epidemy the petechiæ diſappeared too ſoon, for, as he himſelf confeſſes, they ſcarcely remained three or four days; as it is well known that they ought to remain for ſeven or eight days to reſolve the diſeaſe; nor were they mild and pure, but complicated and malignant, which deſerves attention. At Piſtoia, an univerſal ſweat continuing for two days in ſome patients reſolved the diſeaſe. In moſt of them there was occaſion for ſtools, and copious urine depoſiting a ſediment. For in that place, as well as in Voghiera, the petechiæ were combined with a bilious and gaſtric vitiation of the chyle §. But no one appeared to recover merely in conſequence of a copious diſcharge of urine ¶.

* Cambieri, and Trollius, l. c. † *Ibid.* ‡ *Diſs. cit.* § xxv. ‖ L. c. § Pinaroli and Frambaglia, l. c. ¶ Pinarol.

332. Sometimes, as in other acute and febrile diſeaſes of a bad kind, in the petechiæ necroſes

and gangrenes ſupervene externally. But as the os ſacrum and nates appear more frequently affected, moſt people derive them from the patient's lying long on the back, in conſequence of which the parts being for a length of time preſſed, are deprived of the circulation; or from the urine which is voided involuntarily, by which thoſe parts are continually kept moiſt. But I am not much diſpoſed to derive them from either of theſe cauſes, becauſe, in other diſeaſes, lying in the ſupine poſture even for a much longer time, and the unconſcious voiding of the urine, ſcarcely ever produce theſe effects. I conſider it as being more probable that the ſame cauſe, which has given riſe to gangrene of the internal viſcera,—which, I have frequently obſerved, appears from diſſection,—being carried to the ſurface, burns and produces mortification in the parts on which it falls. I have likewiſe frequently obſerved the ſkin about the os ſacrum and nates, at the height of the complaint, become firſt red, then livid, black, and at length deeply affected with gangrene, even in thoſe patients who had neither lain long in the ſupine poſture, or voided their urine involuntarily, with a remarkable and ſudden diminution of the whole diſeaſe and its ſymptoms, ſoon followed by apyrexia and a reſtoration of the health. Nor are theſe parts only affected with gangrene, but others alſo which ſuffer no

preſſure, and are not wet with the urine. I have ſeen bliſters applied to the calves of the legs, or inner part of the thigh, a little above the knee, occaſion deep gangrenes; I have alſo ſeen the ſoles of the feet, and the fingers, to which ſinapiſms had been applied, affected with gangrenous phlyctænæ, more or leſs broad and deep, followed by the ſame ſucceſsful termination of the diſeaſe; for by means of ſtimulant applications, the cauſtic and deadly matter of the diſeaſe is drawn out to the ſurface *. It muſt not be ſuppoſed, however, that I pronounce every kind of gangrene to be critical and ſalutary. For I know that at times ſo great is the force of the corruption, that ſometimes one part, ſometimes another, becomes black, putrid, and mortifies, and is followed by the very worſt conſequences. I conſider only thoſe as ſalutary and critical, which are occaſioned by a *metaſtaſis*, or the diſeaſe paſſing from the internal to the external parts of the body.

* Dall' Armi, *Sagg. di Med. Prat.* T. 1. p. 67.

333. But the metaſtaſis of the morbific matter to the ſurface, does not always occaſion gangrene. It is frequently forced to the parotid glands, the axillæ, and other parts, under the form of tumours, abſceſſes, eryſipelas, or œdema *; by which, if the diſeaſe is not reſolved, it is frequently at leaſt very much diminiſhed. But the termination of the ſwellings of the paro-

tid glands, if they do not quickly and completely ſuppurate, is generally doubtful; as I have elſewhere (Vol. I. 303. et ſeq.) mentioned in a general way, and ſhall again ſhew when I come to treat of the prognoſis. In ſome patients, after feeling a troubleſome ſenſation of heat in the legs, the legs themſelves ſwelled, and the diſeaſe terminated favourably, as we are informed by Trollius †. The petechiæ are likewiſe accompanied with hemorrhages of the noſe, uterus, anus, and ſometimes alſo of the eyes, by which nature endeavours to remove the diſeaſe. But when theſe prove ſalutary, when otherwiſe, ſhall be explained in treating of the progoſtic marks. At Belgiojoſum and Piſtoia, the flow of the menſes was attended neither with relief, nor injury. Pregnant women generally ſuffer abortion, and the fœtus ſometimes dies in the womb. All ſuch as experienced an abortion, both at Belgiojoſum and Stratella, had a ſucceſsful recovery ‡.

* Haſenöhrl, l. c. c. 2. † L. c. ‡ Troll. l. c. Pinarol. l. c. Selicorn. *Opuſc. med. Prat.* vol. viii.

334. Occaſional mention has been made of the ſtate of the urine; but I have not ſufficiently explained how various it is found in this diſeaſe. It varies in different ways. At firſt it is at one time thin and watery; at another time natural, and exhibits a globular, unequal, paliſh cloud floating in it. Sometimes alſo at the beginning

it is whitiſh, but copious; ſhortly after it grows confuſed, like pomegranate wine, or yellowiſh, thick, turbid, and depoſits a ſediment. It likewiſe ſometimes grows black, as if it were mixed with ſoot, or turns red, being ſlightly tinged with blood. Sometimes during the increaſe, and at the height of the complaint, it is nearly ſuppreſſed *, which has already been remarked, and muſt be conſidered as a fatal ſymptom, unleſs it quickly comes off thick, and depoſits a ſediment. Trollius, in his patients, always found it proper in quantity, ſeldom thin and pellucid, but generally free of ſediment, frequently of a dark citron colour, ſometimes of a duſky red, but never concocted, or having a proper ſediment †. Pinaroli, however, found the urine on the firſt days of the complaint, pale, clear, and ſcanty; during its increaſe, ſomewhat red and confuſed; at its decline, turbid and thick, but not uniformly ſo ‡. Ramazzini, on the other hand, relates that the urine at the very beginning was more or leſs turbid, and never like that in health, unleſs at the decline of the diſeaſe ‖.

* Fracaſt. l. c. † L. c. ‡ L. c. ‖ *Diſſ. Cit.* § 18.

335. Hitherto I have ſpoke chiefly of the epidemic petechiæ. As the ſporadic ſpecies of the complaint differs little or nothing from them, it would be ſuperfluous to deſcribe it here, as what has already been ſaid of the former applies quite well to the latter ſpecies. With Bianchini * I would

only add, that the epidemic complaint frequently varies, according to the variety of ſituations, countries, ſeaſons, habitations, patients, and the mode of treatment adopted; nay, that that which was at firſt mild is ſometimes converted into a malignant one, and *vice verſa*. I know ſome very late writers, who deny that the petechiæ are communicated by contagion. I confeſs that it ſometimes appears very doubtful whether they are contagious or not. But ſuch unequivocal inſtances of their being propagated by contagion are recorded, that it cannot be denied that they have been ſometimes contagious. Thoſe which Roboret has deſcribed †, were contagious; thoſe alſo were contagious which lately committed ſuch havock at Fraſcarolum, Caſamata, and Stratella ‡. Laſtly, thoſe were contagious which pervaded the whole diſtrict of Æmilia in the year 1767.

* Let. iv. p. 135, † L. c. c. 9. ‡ Angiol. Pinarol. Selicorn.

336. The petechial diſeaſe, both epidemic and ſporadic, attacks every body indiſcriminately. Children, young people, adults, and old people, both rich and poor, low and high, indolent and active, and the ſtrong as well as the weak of both ſexes, are liable to it *. But according to the difference of the ſeaſon, and prevailing epidemy, ſome ſeem to be more diſpoſed to it, others leſs ſo, and to run more or leſs riſk. In Fracaſtor's time, few women, ſtill fewer old men, and

ſcarcely any Jews, died of this complaint, when it prevailed epidemically; but young people and children, and particularly thoſe of rank, were more ſeverely affected with the complaint, ſeveral of whom ſunk under it †. Roboret found wealthy people, and thoſe of condition at Trent, affected more ſeverely, and expoſed to greater danger ‡. At Halle, in the year 1698, young people and adults were moſt liable to the diſeaſe; and men run greater riſk than women; while infants, children, and thoſe advanced in life, remained free of the complaint ‖. At Montecchi, in the year 1764, the robuſt, and thoſe of a ſanguine temperament, and ſuch as had reached their fortieth year, or paſſed their ſixtieth, experienced the diſeaſe with more ſeverity and danger, and, on the other hand, young people and the poor with much leſs §. At Fraſcarolum, however, all the young people and adults that were attacked with this diſeaſe died; and alſo the women were more ſeverely affected, and many of them, particularly valetudinarians, were cut off. On the contrary, old men were leſs frequently, and more mildly affected, and eaſily bore the diſeaſe, and got the better of it ¶. At Modena alſo, the ſame thing was obſerved with reſpect to old people; but in that city valetudinarians, and weakly people, experienced the complaint in the ſame manner as old people **. But elſewhere, as I have already ſaid, the inhabitants

were indiſcriminately ſeized with the petechiæ; thoſe, however, who had laboured under tertian fever during the preceding autumn, were affected with the complaint in a much ſlighter degree ††. Nor is it uncommon for this diſeaſe to fall upon poor people firſt, and next to attack the opulent and great. Sometimes, however, ſcarcely one of the richer claſs of people was obſerved to be affected with it ‡‡. At other times, when almoſt all were affected with the complaint, the monks and nuns alone eſcaped ‖‖; probably becauſe in the monaſteries regular living is more attended to, and the contagion does not find eaſy acceſs to them.

* Fracaſt. l. c. Robor. l. c. † Ramazz. l. c. § xxxvii. ‡ *Ibid.* ‖ Hoffman, *De Febr.* ſect. 1. c. x. obſ. 1. § Dall' Arm. *Sagg. di Med. Prat.* P. 1. p. 15. ¶ Angiol. vol. viii. *Opuſc. Med. Prat. del* Sig. Targion. ** Ramaz. l. c. § 17. †† Trollius, l. c. ‡‡ Frambaglia, *ibid.* ‖‖ Ramaz. l. c. &c.

337. Likewiſe ſome countries and places are more or leſs infeſted with the petechiæ than others. It is well known that the eaſtern countries are remarkable on this account, particularly Egypt, Cyprus, and the other neighbouring iſlands; as alſo Pannonia, Auſtria, and, laſtly, almoſt all Europe, but particularly camps, hoſpitals, ſhips, priſons, and marſhy, damp ſituations. When the petechiæ prevail, thoſe perſons are generally firſt ſeized with them who dwell in low, narrow,

damp, badly ventilated houſes; after them the complaint paſſes to the larger habitations, eſpecially when it can be communicated to the healthy by contagion. It muſt not, however, be concluded that the more healthy and elevated ſituations eſcape this malady. We are told by Ramazzini, that the champaign country about Modena, and the tops of the Appenini mountains which look towards the ſouth, were infeſted with the complaint at the ſame time *; but that the hills at the bottom of the Appenines, as not being expoſed to the ſouth winds, did not experience the effects of that diſtemper. And he adds, that the complaint was milder in the country than in town; the cauſe of which difference was probably to be attributed to the purity of the air, and its freer circulation through the open fields than in towns and populous cities. In the territory of Voghiera, and in the city itſelf, Frambaglia confeſſes that the low damp ſituations were more liable to the complaint laſt year, though he denies that the inhabitants of the mountains and hills eſcaped its attacks †. The town of Belgiojoſum is placed neither in a high nor a low ſituation, but the village of Stratella ſtands before it on higher ground. But the inhabitants of both places, as well as others, experienced the epidemic complaint in all its violence ‡. Nay, ſometimes the oppoſite of this happened. Healthy places, enjoying pure air, are infeſted with the complaint; while low

marſhy ones remain free of it. In the year 1767, Tuſcany, and almoſt the whole of Æmilia, were infeſted with the petechial diſeaſe. I recollect that the inhabitants of Arezzo, who live in an elevated, healthy ſituation, were affected much more ſeverely than others. Thus the inhabitants of Fayence, who lived in a dry ſoil, and little removed from the foot of the Appenines, were affected with the greateſt ſeverity; while thoſe of Ravenna, next the Adriatic ſhore, and almoſt ſurrounded with ſtagnant waters, enjoyed perfect health.

* *Diſſ. Cit.* § xxvi. † Targion. *Opuſc. Med. Prat.* vol. viii. ‡ Trollius, l. c.

338. There is likewiſe a report, that thoſe who have been once affected with the petechiæ never experience the complaint again. But it is proved to be groundleſs. I have frequently met with patients who have been ſeveral times affected with the complaint. Roboret * likewiſe has ſeen ſeveral patients who had experienced the complaint two or three times. But I do not deny that ſuch as have laboured under the petechial complaint once, are not ſo apt to take it again; at any rate, that they have it in a much milder degree. Nor do the intercurrent diſeaſes, which are ſometimes of various kinds, remain free of the petechiæ †. In the month of May laſt year, intermitting fevers prevailed at Belgiojoſum, attended with petechiæ, which completely yielded to the peruvian

bark. The intermitting fevers alſo which occurred at Piſtoia, during the prevalence of the petechiæ there, or followed them, were accompanied with petechiæ, and eaſily removed by the peruvian bark, as I was lately informed by Pinaroli ‡. Likewiſe at Milan here, in the beginning of the ſpring of this preſent year, I found the petechiæ combined with intermitting fevers among the peaſantry, as if they were the forerunners of the petechial complaint which immediately after followed them; for at preſent, in the month of June ‖, a good many patients, from the country in the neighbourhood, labouring under the petechial diſeaſe, are flocking into the hoſpital here.

* L. c. c. 12. † Ramaz. l. c. ‡ *Altra Lettera ec. Opuſc. Med. Prat.* vol. ix. ‖ 1784.

THE DIAGNOSIS.

339. FROM the hiſtory of the diſeaſe already delivered, its diagnoſis readily flows. But the ſymptoms more particularly characteriſing the diſeaſe are, heavineſs of the head; acute headach; remarkable laſſitude and torpor of the whole body and limbs; a pain in the loins, back, and ſhoulder-blades, like a rheumatic one, and affecting almoſt all the joints with great ſeverity; anorexia; nauſea; anxiety; generally a ſmall pulſe, not frequent, quick and irregular; ſighing; fainting; tinnitus aurium; in moſt caſes redneſs of the eyes; pain in the throat; on the fourth, fifth,

ſixth, or ſeventh day, the eruption of petechiæ occurring; ſubſultus tendinum; tremors of the hands; diſordered mind; watching; coma; dry tongue; thirſt; an averſion to drink; ſometimes impaired deglutition; ſuppreſſion of the urine; ſwelling and tenſion of the abdomen; delirium; convulſive motions; an anomalous, remitting, vague, and changeable fever *. And theſe ſymptoms muſt be conſidered as being almoſt in common to every ſpecies of the petechiæ; in the mild ones, however, they are ſlighter, and in the malignant more ſevere. But the mild ſpecies is diſtinguiſhed from the other particularly by the fever, which precedes the eruption, being ſlighter, together with all its ſymptoms; by the eruption appearing firſt on the neck, breaſt, epigaſtrium, and then gradually proceeding all over the body to the extremities of the hands and feet; by the petechiæ being generally of a red, roſy colour; by the fever and other ſymptoms after the eruption abating, or almoſt ceaſing; by the ſhining and calmneſs of the eyes, by the hilarity of the face; by the eaſy, uniform, and placid reſpiration; by the moiſture of the ſkin; by the appearance of the urine being almoſt natural; by the mind becoming calm, and the pulſe riſing, unleſs it was already ſtrong and full, as it generally is during all the reſt of the diſeaſe †; laſtly, by the petechiæ remaining long, namely, nine, ten, or eleven days, and ſlowly becoming diſco-

loured, and generally diſappearing on the fourteenth or ſeventeenth day ‡. All the patients at Begiojoſum whoſe pulſe was ſtrong and not quick, after a ſpeedy and favourable eruption, ſhortly recovered ‖. And the ſame thing was remarked by Cambieri, all of whoſe patients had ſuch a pulſe, and turned out well §.

* The ſymptoms peculiar to the petechiæ, before the eruption appeared, were obſerved in the year 1692, at Modena, to be the following: "Immenſe laſſitude felt along the back, headach, deafneſs, heat felt in the fauces, ſtupor, anxiety about the præcordia, and univerſal ſluggiſhneſs. But the pain of the back and lumbar region was ſo ſure a mark of the petechial fever as ſeldom to miſlead." Ramaz. *Diſſ. Cit.* § 17. † Sims, *Obſervations on Epidemic Diſeaſes*, c. 2. ‡ Sagar, l. c. ‖ Trollius, l. c. § L. c.

340. The primary, or eſſential petechiæ, have a great reſemblance to the acute gaſtric fevers, and particularly to the *petechial gaſtric fever* (Vol. I. par. 332.), with which they may be readily confounded, eſpecially when they are combined with vitiated chylification. But the petechiæ differ from it, 1. becauſe they appear in all patients; 2. becauſe they break out at the beginning of the complaint, although purging has been premiſed, and the colluvies expelled from the *primæ viæ;* 3. becauſe they are uniformly conjoined with ſymptoms of indigeſtion, and neither vomiting nor purging at all change, or retard, their progreſs; while, in the gaſtric fever,

either evacuation, or both, immediately diminiſhes or removes the diſeaſe, or at leaſt renders it much milder; 4. becauſe they frequently diſappear without any other ſenſible excretion; 5. becauſe, when they are forced in, or diſappear ſoon, they occaſion danger to the patient's life. On the other hand, in the gaſtric fever, petechiæ ſeldom break out, and ſtill ſeldomer when the diſeaſe is advanced; and they frequently take place in conſequence of purging being neglected, or a heating regimen, and improper method of cure being employed, and generally are obſerved only in ſevere caſes. Nay, they are prevented by the timely purging of the belly. Symptoms of indigeſtion are always preſent, and this fever is never intirely reſolved without a diarrhœa; nor does any ſerious conſequence enſue, if the eruption is quickly diſcuſſed, or repelled. They may likewiſe be diſtinguiſhed nearly by the ſame marks from the *febris catarrhalis maligna Germanorum* (Vol. I. par. 414.). I have already obſerved (Vol. I. par. 409.) by what marks they differ from the *febris Hungarica*, to which they appear very ſimilar.

THE PROGNOSIS.

341. NOT only phyſicians, but every old woman knows, that the primary or eſſential petechiæ are a dangerous, and often a fatal diſeaſe. But the benign ſpecies (325.) is attended with

leſs danger than the malignant (326.), as muſt appear evident. Likewiſe thoſe petechiæ which come on without fever, and are not attended with it in their courſe, or with but a ſlight one, unaccompanied with ſevere ſymptoms, are generally without danger. Thoſe alſo are conſidered as ſafer, which are diſtinct, circumſcribed, and broad, and which break out firſt on the upper parts of the body, gradually proceeding to the very ſoles of the feet, and are of a bright red, and remain long, at leaſt for ſix, ſeven, or eight days, and, laſtly, gradually become pale, yellow, and ſlowly diſappear. That happens particularly when the diſeaſe is of a mild kind, and when there is but a ſlight taint of the fluids; while the vital powers remain vigorous. On the other hand, the *diffuſe* ones (323.) are condemned by Strack as being pernicious, wavering, and apt to ſtrike in; the truth of which I myſelf have experienced. But thoſe patients are in greater danger, in whom the petechiæ break out without any ſymptom of fever, but are followed by the fever (309.), for they are attended with more ſevere ſymptoms. The more copious and thicker they are, the greater is the ſeverity of the diſeaſe they indicate; as alſo thoſe which appear with difficulty, and are ſmall and ſcarce viſible, or, as it were, deep-ſeated, ſeem to promiſe no more favourable termination, or at leaſt render the diſeaſe more difficult and tedious. But the mere

quantity and thickneſs of them, or their ſparſeneſs and ſmallneſs, implies nothing certain, if we do not look to the other ſymptoms. Thoſe which appear prematurely, that is, before the fourth day, and copiouſly, are generally conſidered as deſtructive †; not becauſe they appear before concoction, as was commonly ſuppoſed formerly, but as, I think, becauſe they generally indicate the quantity of the petechial fomes, and do not intirely exhauſt it. In the epidemy of Turin, deſcribed by Richa, almoſt all thoſe died in whom the eruption took place too ſoon. A girl of ten years of age, in whom the eruption took place on the ſecond day, died on the ſixth. The ſixth day alſo proved fatal to a ſoldier, in whom the eruption had taken place on the third day. A certain ſurgeon, who had had the eruption on the ſecond day, died on the tenth. Another patient was cut off on the fourteenth, after the petechiæ had broken out on the fourth ‡. Ramazzini alſo mentions, that all the patients in Modena, in whom the eruption had taken place prematurely, were cut off. Trollius ‖, on the other hand, found the reverſe of this to take place: for all thoſe whom he obſerved to be covered with the petechiæ on the ſecond day, had a milder and ſhorter diſeaſe, and recovered. In them alſo the eruption was both fuller, the ſpots broad, and the pulſe ſtrong. Sagar, alſo, obſerved thoſe petechiæ which broke out on the third, fourth, and fifth

day, and muſt of courſe be conſidered as early ones, proved mild, and were attended with relief §. We, therefore, muſt not attend merely to the duration of the eruption, before pronouncing a favourable or unfavourable prognoſis.

* Trollius, l. c. † Roboret, l. c. c. 12. ‡ L. c. § xxii. ‖ L. c. § Cl. x. ord. 1. *Exanth. Contag.* gen. iv.

342. They likewiſe generally threaten danger when they at one time appear, at another time diſappear, although they frequently attempt breaking out *. But they are much more to be dreaded if they diſappear too ſoon, or ſuddenly ſtrike in, as the moſt ample experience confirms †. At Vienna, the moſt lamentable ſymptoms were occaſioned by their ſtriking in, namely, frequent panting, and irregular reſpiration, weak, quick, intermitting pulſe; cold ſweats on the forehead and neck, and laſtly death ‡. In the epidemy which prevailed at Fayence, and which I have deſcribed, although the eruption afforded relief to few, its ſtriking in was followed by delirium, oppreſſion at the cheſt, convulſions, and at length death ‖. In that which lately prevailed at Belgiojoſum, in like manner the ſtriking in of the eruption threatened the utmoſt danger, if not actual death §. It is to be obſerved, however, that the petechiæ ſometimes diſappear, or ſtrike in, without danger or harm; namely, when the diarrhœa, or diſcharge of urine, or ſweat ſupplies their place. The ſmall-pox themſelves, if

they become depreſſed, or retire into the ſyſtem, are often freed from inevitable danger by theſe evacuations ſupervening. On this account, perhaps, becauſe, after the ſtriking in of the eruption, they have ſometimes obſerved no bad ſymptom ariſe, they have haſtily concluded that the petechiæ were then ſymptomatic. Their colour alſo deſerves attention. Thoſe which are livid, brown, black, or of a blackiſh green, frequently afford an indication of putrefaction, or ſphacelus. Likewiſe, when their colour was of a bright ſcarlet, it was conſidered by Fracaſtor as ſuſpicious ¶. If black or green vibices are conjoined with them, they are with reaſon ſaid to indicate a fatal termination **.

* Richa, l. c. § 22. Ramazz. l. c. Haſenöhrl, l. c. c. 2. Sagar, l. c. † Fracaſt. Foreſt, Diemerbroeck, Platner, Ludwig, &c. ‡ Haſenöhrl, l. c. c. 2. ‖ *Sagg. di Med.* l. c. § Trollius, l. c. ¶ L. c. ** Duplanili, *in a note on* Buchan's *Domeſtic Medicine*, vol. ii. p. 17.

343. Among the marks of danger, and ſometimes even of death, being about to happen, are univerſally enumerated the greateſt loſs of ſtrength, a looſeneſs being eaſily excited by a gentle medicine, a profuſe evacuation as if proceeding from the diſſolved fluids; either no thirſt, or unextinguiſhable thirſt; a dry, black, cracked tongue, trembling of it, and its being thruſt out with difficulty; after the eruption

takes place, the reſpiration ſtill remaining laborious, ſtrait, and irregular; no relief being received from any excretion happening; an aggravation of the delirium, together with the other ſymptoms; after ſweating, looſeneſs, and other evacuations, phrenitis, and conſtant fatuity; ſuffocating angina, and phagedenic ulcers in the throat; a great change in the voice; dyſphagia, or difficult deglutition, eſpecially if, when there is no tumour or pain in the throat, it ſeems to ariſe from ſpaſm or reſolution of the nerves; dulneſs of the ſight, gutta ſerena, ſquinting, dryneſs of the eyes, the face from being black becoming red, or livid, or cadaverous; the frequent uncovering of the breaſt; a cold, clammy ſweat, or that which is tinged with blood, and ſimilar ſaliva; thin, crude urine, not depoſiting a ſediment, and not turbid, or black; or having a black or reddiſh ſediment, in conſequence of its mixture with blood; ſwelling and diſtenſion of the abdomen, attended with a looſe belly, and very fetid, thin ſtools; ichorus, watery, frequent excretions taking place, without the patient's knowledge, attended with coldneſs of the extremities, a ſmall, obſcure, languid, irregular pulſe, that can ſcarcely be called febrile, or a ſlow, intermitting one, unleſs it precedes a critical diarrhœa; true aſphyxia; frequent and remarkable ſubſultus of the tendons and muſcles; very obſtinate watching, a lethargic, or comatoſe ſleep;

and, laſtly, diſtenſions of the nerves, which are the forerunners of death being about to take place *. Likewiſe permanent ſuppreſſion of the urine, particularly proceeding from a defective ſecretion of it, is eſteemed to be fatal; when proceeding from a morbid ſtate of the bladder, it is otherwiſe. The more of thoſe ſymptoms ſupervene, and the more ſevere they are, the more certain is the patient's danger, or death; and *vice verſa* †.

* Fracaſt. l. c. Hoffman, l. c. c. xi. § v. Roboret, l. c. c. xvii. Buchan, l. c. Ramaz. l. c. &c. † Fracaſt. *ib.* Buchan, *ib.*

344. When the petechiæ attack a perſon under the appearance of the *cauſus*, or ardent fever, they uniformly prove fatal. This is aſſerted by Petrus A Caſtro, and with reaſon *; for I have frequently had occaſion to lament the truth of it in patients of all ages. Thoſe of a robuſt, ſanguine, plethoric habit, young men and adults, are generally affected with greater ſeverity, and run greater riſk. In the diſeaſe which prevailed at Montecchi in the year 1764, ſcarce any of thoſe patients could be ſaved who had committed any remarkable error with reſpect to drink or eating †. Immoderate hemorrhages are generally eſteemed to be bad. For when they ariſe from exceſſive tenuity and diſſolution of the blood, they are commonly fatal. On the other hand, in plethoric patients and young people, even when

copious, eſpecially proceeding from the noſe, they are frequently ſalutary. But drops of blood trickling from the noſe, denote an unavailing effort of nature, and that her power is overcome. The hiccup, not that preceding the eruption, or which is occaſioned only by colluvies in the ſtomach, or worms, but that which follows it, and depends on inflammation of the diaphragm and ſtomach, or on the ſpaſm occaſioned by the petechial virus, not only obſtinately reſiſts every remedy, but generally deprives the patient of life. This was a frequent ſymptom at Modena, and uniformly proved fatal ‡. It was likewiſe obſerved there, that at the beginning of the diſeaſe, lumbrici being paſſed by the mouth, afforded a certain proof that death would enſue. I have already delivered my opinion concerning the aphthæ producing deep ulcerations in the fauces, œſophagus, and larynx. But thoſe which affect the mouth and tongue do not ſeem ſo alarming. Nay, it frequently happens, that in conſequence of ſome cauſtic and poiſonous principle being forced by the efforts of nature to the tongue and cavity of the mouth, and as it were thrown off, not only the fever, but alſo the bad ſymptoms, are mitigated, and thus pave the way for the return of health. The abſceſſes which break out in the axillæ, or parotid glands, particularly in young people, frequently diminiſh the diſeaſe; but the tumours of theſe parts do not always terminate

in abſceſſes, eſpecially in old people. They then either obſtruct the paſſage of the throat by their bulk, or ſhew that the efforts of the ſyſtem are unavailing, or, ſuddenly diſappearing, threaten a fatal metaſtaſis. In the years 1759 and 1760, very few patients were affected with theſe ſwellings of the parotids; but ſuch as were ſhortly after died. At Belgiojoſum, Trollius had only four patients, two men and two women, whoſe parotid glands became ſwelled. The men, who were advanced in life, after a lingering illneſs at length were carried off, while the women gradually recovered. In the town of Voghiera, ſome patients had ſlight ſwellings of theſe glands, but they ſoon diſappeared without injury, a looſeneſs in the mean time coming on, and ſupplying their place. But in the ſame manner as in all acute diſeaſes, in the petechiæ, both the ſalutary and fatal prognoſtic marks are of a doubtful nature. Hence Trollius tells us, that no ſymptom which occurred in Belgiojoſum was ſo ſevere as to be the forerunner of certain death ‖. For not a few, after being reduced to the laſt extremity, and ſeemingly paſt all hopes, notwithſtanding recovered. Nor ought we always to rely ſo much upon thoſe ſymptoms which are univerſally eſteemed to be ſalutary, as to lay aſide all apprehenſion for the patient's ſafety. For not unfrequently the face of things is ſuddenly

changed, and death, which was not ſuſpected to be near, approaches faſt. Certain ſymptoms, however, muſt not be overlooked, the preſence of which has frequently inſured the patient's recovery. The chief of theſe are, the natural ſhining appearance of the eye, a raiſed, ſoft pulſe, deafneſs, particularly about the height of the complaint, and ſome reſt occaſionally enjoyed §. The reſpiration alſo being eaſy, gentle, free, and, during the whole courſe of the diſeaſe, equable, affords grounds for favourable expectations. Puſtules alſo riſing about the lips and noſtrils, when the diſeaſe is about to take a turn, or during its increaſe, an efflorescence being ſuperadded to the petechiæ, or a moderate looſeneſs occurring about the fourth or fifth day, attended with ſlight heat and gentle ſweating, provided they are of ſome duration, afford a favourable prognoſtic ¶. The deep ſleep being protracted in ſome patients from the ninth or tenth day to the fourteenth, or beyond it, reſolves the diſeaſe; it is generally conſidered as favourable, if it ſupervenes towards the concluſion of the diſeaſe, together with other good ſymptoms.

* L. c. ſect. 2. aph. 7. † Dall' Armi, *Sagg. cit.* P. 1. p. 15. and 17. ‡ Ramaz. l. c. § xxii. ‖ L. c. § Trollius, *ib.* ¶ Buchan, l. c.

THE CAUSES.

345. AMONG the cauſes of epidemic diſeaſes, and particularly of the petechiæ, I find are enumerated warm and moiſt ſtates of the air during the prevalence of the ſouth wind; unuſually variable and inconſtant weather; the prevalence of the ſouth winds; the want of ſalutary ones; ſcarcity of proviſions; bad living; the uſe of alkaleſcent and putrid meat; grain which has been blighted *, or otherwiſe corrupted, or that has been depoſited in damp places; damp ſituations and ſtagnant and corrupted waters, or thoſe which are contaminated with locuſts thrown into them; inundations; ſtagnant pools, ditches, and other receptacles for water, dry and fermenting; common ſewers, or neceſſaries being opened, and raſhly ſtirred; unburied bodies; the effluvia ariſing from hemp and hides ſteeping in ſtagnant waters; the ſudden eſcaping of pernicious vapours from caves and other lurking places; the impure air of hoſpitals, ſhips, priſons, and work-houſes, not ſufficiently renewed; the long remaining in company, or aſſociating, with perſons labouring under the complaint; and, laſtly, a lax habit of body, melancholy, gormandizing, intemperance, venery, hunger, watching, and immoderate labour.

* Ramazzini ſaw only intermitting fevers ariſe from this cauſe, but never petechiæ. I myſelf, in the year 1765, after a mildew had come on, which was not only very fatal to the corn-fields, but likewiſe to all the trees, obſerved a great many

intermitting fevers arife at Fayence, but it was not afcertained whether they ought to be afcribed to the mildew, or to the inundations which occurred on the fame year. Frequently, however, petechiæ fupervened in thefe fevers, as fymptoms of them, and were removed, together with the fever, by employing the peruvian bark. Thofe doubtlefs were fymptomatic and fecondary, as having come on with the fever, and departed along with it, by employing the antidote. Did thefe petechiæ announce the epidemy which afterwards followed in the year 1767?

346. But the cauſe which is moſt frequently accuſed is ſcarcity of proviſions, becauſe generally poor people are firſt attacked with epidemic diſeaſes. Hence moſt phyſicians derive the complaint from neglect of cleanlineſs, and narrow, damp, unhealthy dwellings. But not unfrequently the petechiæ prevail likewiſe epidemically when no ſcarcity of proviſions, mildew, or vitiation of the grain, have preceded, and attack the opulent who dwell in commodious houſes, and have no correſpondence with the infected. Nay, they are frequently more ſeverely affected, and run greater riſk than the common people. Fracaſtor remarked this to take place particularly in the petechiæ of the year 1528; and after him Roboret obſerved the ſame thing at Trent. It was long after obſerved by Ramazzini likewiſe, in the petechiæ of Modena, which he could aſcribe neither to ſcarcity of proviſions, nor to the grain having been mildewed *. I myſelf remember, in the malignant and very fatal epidemy of the year 1677, with which great part of Italy, and parti-

cularly Tuſcany and Æmilia, were infeſted, that at Arezzo,—which is not only ſituate on very high ground, and very far from marſhes, but alſo that year abounded ſo much in all kinds of proviſions, and eſpecially grain of the beſt quality, that it alone could nearly have provided againſt the dearth of proviſions all over Tuſcany,—the diſeaſe both ſpread farther, and committed greater havock, as I have already hinted. But I may repeat, that Ravenna, which lies in a lower and damper ſituation, and which was liable to the ſame changes of the weather, and calamities occaſioned by the viciſſitudes of the ſeaſons, with the other neighbouring towns and diſtricts, remained intirely untouched, and free of the general diſtemper; while the other more ſalubrious provinces, and elevated cities, were moſt ſeverely affected. The hiſtory of medicine informs us, that the ſame thing has happened in many other epidemies. I remember alſo, that in the ſame family, employing the ſame kind of food, only one individual has ſometimes been affected, while the reſt have remained uninjured; which undoubtedly invalidates the opinion of thoſe who would derive the cauſe of the diſeaſe from ſcarcity and badneſs of proviſions.

* L.c. § 37.

347. But when ſcarcity of proviſions cannot be accuſed, moſt are of opinion that the ſource of the petechiæ is to be ſought for in the changes of the ſeaſons and weather. But the diſeaſes which

ariſe from the changes of the ſeaſons, generally laſt a ſhort time, uſually not exceeding one or two ſeaſons, as they are diſperſed on the approach of another ſtate of the air. Hence they are commonly called *ſtationary*, or *diſeaſes of the ſeaſon*. And although the petechiæ may be ſometimes ſtationary, as I myſelf have ſometimes obſerved, when they become truly epidemic, and prevail univerſally, they generally continue longer, and are protracted not for one or two ſeaſons only, but frequently for a whole year; nay, for two years, or even three years; which may be eaſily learnt from their publiſhed hiſtories. Moreover, Sydenham, that incomparable obſerver of epidemic diſeaſes, during the ſame or ſimilar ſtates of the ſeaſons and weather, diſcovered that one kind of epidemic does not always ariſe, but ſometimes very different ones; whatever may be ſuppoſed by others who are probably not to be compared with him on account of the number and excellence of their obſervations. Nay, our countryman Ramazzini, who is intimately acquainted with the hiſtory of epidemic diſeaſes, conſidered it as ſurpriſing, "that the ſame diſeaſe, namely, the petechiæ, continued to infeſt both the city, villages, and neighbouring towns, for three whole years, ſo different from each other in reſpect to the ſtate of the weather which prevailed *." And ſuch inſtances will be found pretty frequently occurring, if a perſon impartially and attentively conſiders

the riſe, progreſs, and termination of diſeaſes, and at the ſame time the nature of the ſeaſons and ſtates of the weather which prevail at the time.

* *Diſſert. Cit.* § xiii.

348. With regard to the other cauſes already (345.) enumerated, theſe ſeem to be of ſuch a nature as to impart ſomething to the air, by which the bodies, according as they are more or leſs prediſpoſed for receiving it, are contaminated. This manifeſtly takes place in the air of hoſpitals, ſhips, priſons, work-houſes, and military camps, into which, on any perſon entering, and remaining for ſome time, although in perfect health, he is immediately ſeized with the petechial diſeaſe. For the fever which is named *hoſpital*, *ſhip*, *jail*, or *camp fever*, is generally the petechial one, as I have already frequently learnt by experience; and I have the ſupport of Monro's numerous and accurate obſervations made in military hoſpitals *. Why not, therefore, derive the epidemic petechiæ from the air containing ſome hidden, noxious matter, independent of the alteration of its primary qualities, as they are called †? Add to this, that the petechial diſeaſe, when epidemic, as I have already ſhewn, not only attacks one people in preference to another, although they live in the ſame climate, and uſe the ſame kind of proviſions ‡, but, gradually paſſing from place to place, ſometimes commits its devaſtations over whole provinces and kingdoms. It is likewiſe

frequently communicated by contagion to ſound and healthy bodies, when they imprudently ſit too long near thoſe who labour under the complaint. Hence it appears very probable that ſomething floats in the air, which paſſes from place to place without being diſſipated, and accumulates, or that ſomething proceeds from the patients bodies, which introduces itſelf into healthy ones, and infects them with the ſame taint.

* *On the Diſeaſes of Military Hoſpitals.* And likewiſe Sebaſtian Cera, *De Febre Noſocomica*, p. 2. † Petrus A Caſtro, l. c. ſect. 2. aph. 2. 3. Haſenöhrl, l. c. &c. ‡ Trollius mentions his having obſerved this laſt year at Belgiojoſum; and the ſame thing is confirmed by Cambieri, who informs us that the epidemic petechiæ reached even to the neighbourhood of Chartuſia Papienſis, but did not go beyond it, although the next village, *della Torre*, lies in the ſame plain, and is neither better in point of ſituation, abundance, or any other reſpect. *Vide* Targioni, *Opuſc. Med. Prat.* vol. viii. While the diſeaſe prevailed at Verona and other cities, the dwellings of the Jews, which are generally narrow, filthy, and badly ventilated, although in the ſame climate, and ſubject to the ſame changes of the air, eſcaped the contagion, as Fracaſtor tells us.

349. But I muſt confeſs myſelf totally ignorant of the nature of that noxious matter which infects the air, and floats in it, or is extricated in the patients, and paſſes into healthy bodies, and occaſions the contagion. I am diſpoſed to think, however, that it is a peculiar miaſma, very ſubtile and volatile, which, when once generated, communicates itſelf to the air, and is not eaſily ſeparated from it and diſperſed, but, on the contrary, if by acci-

dent it is rarefied and diſperſed, that it may be again condenſed and accumulated ſomewhere by particular winds, ſo as to prove hurtful. But that when introduced into the fluids of the body, or by any means generated or evolved in them, it has the power of multiplying and propagating itſelf, like a ferment, and, in the ſame manner as the variolous and morbillous miaſma, that it adheres not only to the air, cloaths, and covering, but likewiſe to other bodies in the neighbourhood, like perfumes; and that it is principally generated and evolved in the warm climates, but leſs ſo in the northern latitudes, notwithſtanding that ſometimes it ariſes and rages in them alſo. Hence Petrus A Caſtro appears to me to have properly remarked, that the petechial diſeaſe, when it is epidemic, more frequently rages during the dog-days, leſs frequently in the winter, but with greater fury *; although that the contrary of this too occaſionally happens, appears from the hiſtories of theſe epidemies which are recorded. And in the ſame manner as certain conditions of the air, and ſeaſons of the year, ſeem to be required for the evolution, or generation and accumulation of the variolous principle, and the bodies muſt be in ſome meaſure prepared for being affected by it; ſo the petechial miaſma requires ſimilar cauſes to be evolved, or generated, and acquire its noxious power: but this is not ſufficient for its committing its hoſtilities upon the human

frame, unleſs the body has been in ſome way prediſpoſed for receiving, and being acted upon by it. From which I think it appears, why the petechiæ are at one time epidemic, at another only ſporadic, and why, when they prevail epidemically, all do not feel the force of the morbific miaſma. It may likewiſe occaſionally happen, that in conſequence of ſome of theſe cauſes, the petechial virus may ariſe in ſome conſtitutions, and thus produce the ſporadic petechiæ, without their being referable to contagion.

* L. c. ſect. 2. aph. 7.

350. I am inclined, therefore, to conſider particular conditions of the air and ſeaſons, dearth of proviſions, corrupted grain, unhealthy food, vapid wine, ſtagnant waters, exceſſive fatigue, too long watching, continued melancholy, gormandiſing, inebriety, exceſſive venery, and the like, as prediſpoſing cauſes; and that by means of them the miaſma is both rendered active, and the bodies fit for being acted upon (349.). But moreover, that in conſequence of the variety of theſe cauſes the blood at one time verges on an inflammatory or rheumatic diatheſis, at another has a tendency to colliquation and putrefaction, and at other times retains its natural craſis; ſometimes that a bilious colluvies, ſometimes vitiated chylification, ſometimes worms intervene, and thus give riſe to various combinations of the petechiæ. And that hence it is, that the petechiæ at

one time appear *benign*, at another *malignant*, ſometimes *putrid*, at other times *inflammatory*, *gaſtric*, or of the ſpecies called *verminoſæ*. I do not deny, however, that the petechial miaſma may ſometimes be ſo malignant, putrid, and deſtructive, as not only to affect the whole nervous and fibrous ſyſtem, which is a peculiar property of it, but to diſorder and diſſolve the blood and other fluids, nay, the whole ſyſtem, even in the moſt healthy people, and quickly occaſion corruption and putrefaction; which is particularly obſervable in hoſpitals, priſons, ſhips, and other places where the diſeaſe is received by contagion, and ſometimes rages like a plague.

351. In which caſe it is highly probable that the blood is generally attenuated and diſſolved by ſome ſeptic and acrid principle. This would appear from the blood which is drawn being generally diſſolved and thin, and ſoon corrupting, from the turbid, red, or black urine, or that which depoſits a blackiſh ſediment, from the fetid breath, and ſweats, from the hemorrhages, colliquative diarrhœa, vibices, ecchymoſes, the rapid putrefaction of the dead bodies, and ſimilar phenomena. Hence Huxham * was perſuaded, that in every inſtance of the petechial diſeaſe, the blood is corrupted in conſequence of ſome kind of diſſolution of it †, and, therefore, claſſed the petechiæ with putrid

and malignant diſeaſes. And although it muſt be confeſſed, that frequently the blood in this diſeaſe has a tendency to colliquation,—which Richa alſo ‡ obſerved in the petechial epidemy at Turin, already frequently mentioned,—yet ſymptoms of colliquation are not always manifeſt. Ramazzini ‖ could ſcarcely aſcertain whether the blood was more diſpoſed to concrete or to colliqueſce, although, if he might have been allowed to conjecture, the laſt would have appeared to him the more probable ſuppoſition §. But it is not only frequently doubtful what tendency the blood has, while it retains nearly its natural condition; but ſometimes alſo there is not the ſlighteſt reaſon to apprehend the preſence of any colliquation. De Haën and Haſenöhrl ¶, both at the beginning of the diſeaſe, during its progreſs, and at its height, that is, about the end of the ſecond week, found it very compact, and truly pleuritic **. In fact, to be candid, ſometimes nervous ſymptoms only, ſometimes colliquative and putrid ones, ſometimes inflammatory and coagulative ones, as they are called, occur in the petechiæ; nay, ſometimes all theſe ſymptoms occur, combined together in the ſame patient, ſo that it is a very difficult matter to determine which predominate. There is therefore need of the moſt attentive examination, and the greateſt caution, to prevent committing any error in pronouncing the prognoſis.

* *Eſſai ſur les Fievr. &c.* c. viii. *De la Fievr. Putr. Malig. Pétech.* † Three kinds of colliquation are commonly reckoned to exiſt in the blood drawn from a vein. The firſt is when a very ſcanty craſſamentum floats in a great quantity of ſerum, and it is covered with a thin pellicle, and is very apt to run into diſſolution. This is commonly named the ſerous and acrid diſſolution. The ſecond is when the blood ſhews no ſeparation of the ſerum; but intirely concretes into a mucous, whitiſh, viſcid, ſoft maſs, with a ſmall part of the red intermixed, which is alſo lax, and of a black colour, as if it were a ſymptom of its putrefaction. The third is that in which the blood is very red, and depoſits no ſerum, and yet does not readily concrete. In like manner Joubert (*Hiſt. de la Soc. Roy. de Méd. an* 1776, Paris, 1779, p. 529.) takes notice of three degrees, as it were, of colliquation in the blood of thoſe who die of the petechial complaint. In the firſt the blood is thin, and not much diſpoſed to cohere; in the ſecond it is diſſolved by ſome acrid principle; in the third it becomes putrid, and colliqueſces in conſequence of its corruption. ‡ L. c. § 36. ‖ *Diſſert. Cit.* § 43. § *Id. ib.* § 47. ¶ De Haën, *Rat. Med.* P. v. p. 3. P. ix. p. 74. Haſenöhrl, *Hiſt. Febr. Petech. Cit. an* 1757. 1758. 1759. Vogel, *Acad. Prælect.* § 148.

** In a petechial, and, as it were, peſtilential fever, which raged among the peaſantry around Padua in the year 1731, the blood was denſe and tenacious: Morgagni, *Epiſt. Anat. Med.* 49. art. 22.

352. Thoſe who are of opinion that the blood is always diſſolved in the petechial diſeaſe, conſider the petechial ſpots as ſo many ecchymoſes, and, as it were, ſmall drops of more or leſs corrupted and diſſolved blood effuſed under the epidermis; ſuch, for inſtance, as the ſcorbutic ſpots generally are, which ſupervene in other putrid and malignant diſeaſes, named by us *ſecondary* petechiæ. There

is, therefore, no wonder if they conſider them as always ſymptomatic. Others view the matter in quite a different light. To them the petechiæ, probably on account of their ſometimes following a heating regimen, and frequently appearing firſt red, then livid, or blackiſh, appear to be nothing elſe than ſmall inflammations, very apt to terminate in gangrene. But they are neither painful, ſwelled, nor hot, nor do they ever ſuppurate, nor do they always exhibit the gangrenous blackneſs, in ſo much that I ſhould not think a perſon in the wrong who affirmed that they want the chief marks of inflammation. In ſo controverted a caſe, as far as I can judge, from what has already been ſaid, it ſeems certain that in this diſeaſe ſome heterogeneous matter, of a peculiar, poiſonous, and unknown nature, is ſecreted from the other fluids, and forced to the ſurface. But as it cannot arrive there without being mixed with ſome other fluid, which ſerves as a vehicle, it muſt neceſſarily, according to the variety and diſpoſition of the fluid,—which may differ with the temperament, age, and conſtitution of the patient,—by ſticking in the capillary tubes and minute cells (12.) of the ſkin, or being effuſed under the epidermis, form ſpots varying in ſize, ſhape, and colour. And as the fluid, with which the miaſma is conjoined, is generally the blood; according as it is pure and uncontaminated, or recedes from its natural condition,

and craſis, or is mixed with other fluids, the colour of the ſpots alſo muſt neceſſarily differ; nay, the colour they had at firſt, according as the fluid which occaſions them undergoes any change, may gradually vary. An inſtance of which is afforded by the ecchymoſes, in which the colour is firſt red, next becomes black, blue, yellow, and pale, according as the effuſed blood gradually goes through the various ſtages of diſſolution. It muſt not, however, be ſuppoſed from this, that the primary petechiæ, of which we are treating here in particular, are conſidered by me as ſmall ecchymoſes; nor becauſe the ſpots are generally red, and ſometimes accompanied as it were with ſome degree of inflammation,—eſpecially when they are of the diffuſe kind,—or reſemble ſlight inflammation, would I ever aſſert that they ought to be looked upon as ſo many ſlight inflammations. I confeſs, indeed, that the petechiæ have ſome reſemblance both to ecchymoſes and inflammation, but it is not ſuch as to point out their nature being common. For the colour, even at the beginning, being often variable, paliſh, livid, or brown, their uniform figure, their being no tumour, pain, itching, or ſimilar ſymptoms, ſufficiently evince that they differ from both diſeaſes, and conſtitute a particular exanthema, very different from them in its nature, origin, and effects, and terminating by reſolution alone, never by ſuppuration, or abſceſs *.

* Schlichthorſt (*Diſſert. de Petech.* Goëtting. an. 1783, p. 7.) has made the following obſervations: "The petechiæ at one time put on a red, roſy, purple, or livid colour; at another time a yellow, brown, or cheſnut one; ſometimes a green, lead, bluiſh, or black; at other times all theſe colours are preſent in the ſame patient, and different parts of the body are differently variegated, ſo that the ſkin reſembles diverſified marble, as was formerly obſerved by Monro, Huxham, and Neucrantz, who obſerved red, paliſh, citron-coloured, greenish, and livid petechiæ at the ſame time; and he affirms that theſe different coloured ſpots prove fatal. Sometimes, likewiſe, after the eruption they change their colours in various ways; for at one time their dark colour becomes leſs deep, and paſſes into a red; at another time, on the contrary, thoſe which appeared red become purple and livid." Which varieties, ſucceſſions, and changes of colour, ſeem by no means to correſpond either with ecchymoſes or inflammations.

THE CURE.

353. The indications in the petechial diſeaſe are the ſame as thoſe in the cure of the other exanthemata. The efforts of nature, by which ſhe endeavours to free herſelf from the noxious and heterogeneous principle, if they be moderate and ſufficient, ought neither to be excited nor reſtrained (13.). On the other hand, if they be deficient, they ought to be promoted; if exceſſive, prudently reſtrained. Our main view muſt be, to extricate and draw forth the cauſe of the complaint, from whatever part of the ſyſtem it has ſettled in, whether it be the ſtomach, blood, or nervous ſyſtem, and with the utmoſt caution to obviate its ſymptoms. But as nature, on

whom the cure of diſeaſes depends, claims the principal place, it is better to employ the moſt ſimple method of cure, which may co-operate with, and not controul, her efforts. For experience has very frequently proven, that thoſe who have intruſted the cure intirely to nature, have practiſed with moſt ſucceſs. And this muſt be attended to particularly when the petechiæ are benign, regular, pure, and not complicated; in which caſe Roboret had recourſe to no medicine *. In the petechial epidemy, which prevailed at Modena for three years, the moſt effectual practice conſiſted in employing feweſt remedies, and to allow the diſeaſe to go through its uſual ſtages †. At Turin, likewiſe, as Richa affirms, after the firſt days of the diſeaſe, nothing was found more advantageous by the practitioner than to abſtain from remedies, and cautiouſly lie by ‡. Nor was leſs advantage derived from the moſt ſimple method of cure employed at Vienna; for in the petechiæ of the year 1758, Störck mentions, that not only ſeveral had a ſucceſsful recovery merely from the uſe of wine and whey, but likewiſe candidly confeſſes, that when the whey failed of ſucceſs, the patients received relief from none of the other remedies employed ‖; which ought to be a leſſon to thoſe practitioners who are perpetually oppreſſing their patients with a farrago of drugs. In the year 1784, in

the petechiæ of Montecchi, after bleeding being employed at firſt, the decoction of ſuccory alone ſeemed to perform the remainder of the cure §. Pinaroli reſcued a great many from the grave, merely by the uſe of whey, without any bleeding ¶. And Cambieri employed the moſt ſimple method of cure with equal ſucceſs, having ſucceeded in reſtoring all his patients to health **. I myſelf alſo have repeatedly admired the efficacy of nature in this diſeaſe; and have ſeen more advantage derived from prudently lying by, than from active practice. This happens particularly in the caſe of poor patients, who are leſs frequently viſited by phyſicians, and employ very few medicines.

* L. c. c. xviii. † Ramaz. *Diſſ. Cit.* § 30. ‡ L. c. § 23. 29. ‖ *Ann. Med.* 1. *Aug.* 1758. p. 20. 23. § *Sag. di Med. Prat. Cit.* P. 1. p. 15. ¶ Targion. *Opuſc. Med. Prat.* vol. viii. ** *Ibid.*

354. From theſe remarks (353.) it manifeſtly appears, with what caution and circumſpection the phyſician muſt enter upon the cure of the petechiæ, and of how great moment it is to act rather as the co-adjutor of nature, than to dictate to her. But becauſe various degrees and combinations of the diſeaſe, and the other circumſtances of the patient's temperament, age, and habit, and the ſeaſon of the year, may cauſe nature ſometimes to require the phyſician's aid; I ſhall proceed to enumerate the chief remedies which are occaſionally employed, that the ſtudent may readily un-

derſtand when he ought to have recourſe to them, and what cautions he ought to employ. But I ſhall begin with bleeding, concerning which phyſicians are much divided in opinion. For while ſome reject it intirely in this diſeaſe, others recommend it as warmly, and both parties appeal to their own experience. It has therefore been found at one time to have been pernicious, and at another time proper and advantageous. Hence, omitting the obſervations and arguments of both, that I may not appear prolix, I ſhall endeavour to draw the bounds within which it may be proper to let blood, or not. Generally the petechiæ of themſelves do not require bleeding, nor do they eaſily bear it, unleſs ſome ſymptom comes on which requires it. But then alſo it muſt be moderate, that it may not exhauſt the patient, who is generally already ſufficiently debilitated. For copious, or repeated bleeding, has not unfrequently been known to occaſion death; as it not only deſtroys the vital powers,—which the pulſe immediately becoming languid, ſmall, irregular, or intermitting, evinces,—but deranges the brain and nervous ſyſtem in ſuch a manner as to give riſe to delirium and convulſions; whether that proceeds from the rapid colliquation of the blood, and its penetrating deeper into the brain, or from its acrimony being increaſed or evolved, or from the ſenſibility, or irritability, being diminiſhed, or from any other cauſe.

355. But if ſymptoms of plethora be preſent, if the patient be in his prime, if he enjoy a good habit of body, if the pulſe be ſtrong, hard, and violent; if an acute, conſtant, and throbbing pain in the head diſtreſs the patient, accompanied with difficult reſpiration, weight at the cheſt, a pleuritic pain, or bloody expectoration, and dry, troubleſome cough; in that caſe blood ought to be drawn with caution at the very beginning of the complaint. It muſt be obſerved, however, that the pulſe ſometimes appears great and violent, without being full and hard, as it eaſily gives way to the preſſure of the finger; for it does not then ariſe from plethora, nor from an inflammatory diatheſis of the blood, but from ſome acrid principle ſtimulating the vital organs; nor does it then require, or eaſily bear, the letting of blood. Nor does every pain in the head, though troubleſome, ſtand in need of bleeding; for it is generally ſpaſmodic and convulſive, and not occaſioned by a congeſtion of blood, or inflammation. But if, as I have ſaid, it be conſtant and throbbing, and conjoined with exceſſive heat in the forehead, and violent beating of the temporal and carotid arteries; while the face and eyes are red, and the mind appears to be ſomewhat diſordered; then, although the pulſation at the wriſt is neither great nor ſtrong, but ſomewhat hard and tenſe, there will be need of ſome bleeding, to prevent inflam-

mation of the brain, or phrenitis. Nay, ſome then propoſe opening the jugular or frontal vein, provided it be done before the eruption takes place. For it is the general opinion, that it is better to abſtain from bleeding while the eruption is going on. But it muſt not be ſuppoſed that this holds good in every caſe. For if great ſymptoms of plethora remain, or inflammation of any internal part takes place, or the eruption, on account of the plethora, ſeems to go on too ſlowly, or imperfectly, although the petechiæ already appear, it is ſtill allowable to open a vein, which I have more than once known to be practiſed with advantage, and which uſed to be done by Petrus A Caſtro and Roboret. One of whom adds, that many of the nobility were cut off in conſequence of its being omitted *. But the inflammation of the throat demands particular attention. If it be conſiderable and truly phlegmonic, and renders the deglutition difficult, as we have already ſeen occaſionally happens, or, which is worſe, even impedes the breathing, bleeding cannot be omitted without injury. A petechial fever, accompanied with inflammation of the throat, prevailed at Edinburgh in the year 1733. Almoſt all the patients were reſtored by bleeding. For ſore throats prevailed even without petechiæ, and as it were conſtituted the ſtationary diſeaſe †. Laſt year, when the petechial diſeaſe at Piſtoia, as the ſpring advanced,

aſſumed inflammatory ſymptoms, Pinaroli was obliged to have recourſe to bleeding even a ſecond time, and always with advantage, though it had never before been neceſſary.

* The beſt precepts concerning the employment of bleeding, of both dry and wet cupping-glaſſes, and leeches, have been very fully delivered by Petrus A Caſtro, l. c. ſect. vi. from aph. 1. to aph. xxiv. † L. c. c. xv. ‡ *Edinburgh Med. Eſſays.*

356. But when the propriety of bleeding appears doubtful, and yet ſome ſymptom diſtreſſing the head or breaſt requires being relieved, blood is moſt ſafely drawn by means of wet cupping-glaſſes. For this kind of evacuation not only calls out the virus, by which the eruption is promoted, but alſo exhauſts the ſtrength leſs. For it appears from practical obſervations, that the evacuations which take place from the ſmall veſſels are much more eaſily borne. Hence the reaſon is plain, why hemorrhages from the noſe in theſe complaints, even when copious, leeches applied to the temples, the opening of the vein on the back of the hand, and of the ſublingual veins, and ſimilar evacuations gradually made, have been attended with ſucceſs; which was obſerved not only by the old practitioners, but has alſo been noticed by the moderns, among whom may be conſulted the valuable obſervations of Manetti, a phyſician of the moſt profound learning, and extenſive experience *. But at Mo-

dena, when the petechial diſeaſe prevailed there, no one ever received any injury from cupping-glaſſes having been employed; while veneſection generally proved unſucceſsful, as we are informed by Ramazzini †. Trollius, therefore, induced by the ſucceſsful experiments of Ramazzini and others, not only invariably employed this remedy at the very beginning among his own patients, but likewiſe, if any ſymptom occurred which otherwiſe indicated bleeding, he repeated it, and always with the greateſt advantage ‡. He very ſeldom employed phlebotomy, not becauſe he conſidered it as always proper to abſtain from it, but becauſe he ſcarcely ever found the pulſe in his patients great, ſtrong, and hard, or other ſymptoms indicating its employment. But he likewiſe preferred the cupping-glaſſes to veneſection, even when it ſeemed to be in ſome meaſure indicated, to avoid being blamed by the common people; for, during the prevalence of that epidemy, a report had become quite current, that bleeding would prove certain death. In fact, thoſe patients recovered ſooneſt, who intirely abſtained from bleeding, or employed it with the utmoſt caution, and in the moſt ſparing manner.

* *Conſulto con annot. e agguint.* p. 38. *Firenz.* 1781. † *Diſſ. Cit.* ‡ L. c.

357. Hitherto I have briefly ſhewn, when, with what caution, and from what part, blood may

be ſafely drawn in this complaint. From which it is evident, that in circumſtances the reverſe of theſe in which it is proper, veneſection is inadmiſſible. But our principal attention ſhould be turned to the vital powers. If theſe are languid, if the pulſe is ſmall, weak, and ſoft, or irregular and depreſſed; if a tendency to fainting frequently comes on; if the heat both externally and internally ſcarcely exceeds the natural degree; there is no reaſon for letting blood. Nor does the pulſe alone, although it be great, ſignify any thing, becauſe it generally ſoon ſubſides; and much leſs, if, during the increaſe of the acceſſions, it appears ſo, and afterwards loſes its greatneſs or ſtrength. Nor does the heat alone, when it is great and acrid, require bleeding, as it may be frequently increaſed by a bilious acrimony, and alkaleſcence, or by the rarefaction or internal motion of the fluids. Beſides, veneſection is forbidden by the ſudden and intire loſs of ſtrength, by ſome immoderate evacuation, by a ſoft, lax, or bad habit of body, by a gaſtric, bilious, or putrid vitiation of the chyle, and a phlegmatic, melancholic, or bilious temperament; by a colliquative diarrhœa; by diſſolved blood, or a tendency in it to colliquation; by a preceding, unhealthy, bad, or noxious kind of food; by long continued paſſions; by immoderate ſtudy and labour; by the diſeaſe having originated from

poiſonous exhalations, bad air, and contagion; by the fetid ſmell proceeding from all parts of the body; by the vibices; by necroſes; and by a black, livid, or green colour in the petechiæ; and, laſtly, by the peculiar diſpoſition of the epidemy. For it is well known, that in ſome epidemies, bleeding has been found hurtful, while in others it is not only uſeful, but neceſſary. In the one deſcribed by Fracaſtor, veneſection generally proved fatal. "So certainly," ſays he, "did the thing happen theſe ſome years paſt, that the greater part of thoſe who were bled died *." Nor did the event prove more favourable in that of Modena, deſcribed by Ramazzini †, which I have already noticed. Richa found it abſolutely pernicious in the complaint which prevailed at Turin ‡. In the petechial epidemy of 1752, 1753, at Roncegnum, bleeding reduced the ſtrength and pulſe; occaſioned, or aggravated the delirium; or, at leaſt, prolonged the diſeaſe ‖. And to paſs over other epidemies, in which phlebotomy proved hurtful, let us be contented with the one which Trollius, Pinaroli, Cambieri, Frambaglia, and others, obſerved in the year 1783. On the other hand, Roboret § affirms, that in the year 1591, at Trent, it was generally uſeful, and often neceſſary; and Petrus A Caſtro ſeemed to conſider it in the ſame light at Verona, as, in a preface addreſſed to his pupils in the practice, he has ob-

ſerved, that bleeding in all caſes proved ſerviceable, but performed in different ways, at the proper time, and in due quantity, not ſparingly, as is improperly recommended by Eraſiſtratus ¶. In like manner at Montecchi, in the year 1764**, at Fayence, an. 1759, 1760 ††, at Vienna, an. 1757, 1758 ‡‡, and alſo in Tuſcany, an. 1767 |||, bleeding, when prudently performed, and at the proper time, produced the moſt beneficial effects. On the whole, when it was eaſily borne and proved ſerviceable, the blood was of a firm texture; but when any injury was received from it, the blood was in a ſtate of diſſolution, and lax. It is of great conſequence, therefore, to foretel when bleeding will prove ſerviceable, and when not. With a view to which nothing is more ſerviceable than to inquire what diſeaſes have preceded the epidemic petechiæ, or ſtill continue to prevail. For if the nature of the weather which has preceded, and other prediſpoſing cauſes, have induced inflammatory diſeaſes of that kind which require bleeding; it is highly probable that ſuch a diatheſis of the blood is then combined with the petechiæ, as not only can bear, but even requires veneſection. On the contrary, if the diſeaſes which have been common before the petechiæ were of the gaſtric, bilious, or colliquative kind, in one word, what are called *putrid*, and the weather and other preceding cauſes have been ſuch as vitiate the blood, and prediſpoſe it to diſ-

ſolution and colliquation; it may reaſonably be ſuppoſed that there is a ſimilar diatheſis in the petechiæ, to which bleeding would prove completely hoſtile.

* *De Morb. Contag.* l. 3. c. 6. p. 64. † *Diſſ. Cit.* § 28. ‡ L. c. § 36. ‖ Trogher *in Cit. Sagg. di Med.* P. 1. p. 20. § L. c. ¶ *De Febr. Malig. Punct. in præf.* ** *Sagg. di Med. Prat. Cit.* P. 1. p. 15. †† *Ibid.* p. 60. ‡‡ Haſenöhrl, l. c. Störck, l. c. ‖‖ Targ. Tozzett. *Relazion. delle Febri del* 1767, p. 220.

358. The next place in the cure of the petechiæ is held by vomiting and purging. Concerning the employment of each I ſhall make a few obſervations. If the diſeaſe has ariſen from contagion, the poiſonous miaſma, which has adhered to the ſalivary fluid, or has penetrated to the ſtomach, or has been inhaled into the lungs, ought to be expelled as ſoon as poſſible by means of an emetic; next, if any remains of it are left in the ſyſtem, and have pervaded it more intimately, we muſt endeavour to exhauſt them intirely by means of the cutaneous perſpiration and ſweat. Thus it is generally ſuppreſſed at the very beginning. There is likewiſe occaſion for an emetic, if the ſtomach is oppreſſed with a putrid colluvies, or if the duodenum and liver are diſtended with a collection of bile, which may be known by its characteriſtic marks (Vol. I. par. 391.). Among theſe, vomiting, or an inclination to vomit, is principally remarked. But every kind of vomiting does not point out the preſence of a colluvies in

the *primæ viæ*. For, as I have already remarked, frequently in exanthematic diſeaſes vomiting ariſes from irritation of the nerves, and in that caſe is immediately allayed on the eruption taking place. Sometimes, alſo, it depends on increaſed motion of the blood through the veſſels of the ſtomach, or on congeſtion of it, or on ſome inflammation of the epigaſtric region. In both caſes it is evident that emetics would be improper. They muſt likewiſe be rejected if any ſymptom forbids their employment *(ibid.)*, nor muſt they be taken by plethoric patients, until they have been premiſed by bleeding. But if the inteſtines abound with ſordes and fæces, or the vitiated bile has deſcended to them, it is then better to employ ſome gentle cathartic, as cryſtals of tartar, tamarinds, or rhubarb, avoiding the ſtronger purges, that too great a looſeneſs, to which there is generally a ſtrong propenſity, may not be excited. But gentle purging, provided it be employed on the firſt days of the complaint, that is, on the ſecond or third day, can ſcarcely ever prove hurtful. Some reject it becauſe they are afraid leſt it check the eruption of the petechiæ. But ſo far is bland and gentle purging from interrupting the eruption, that it even promotes it, as Ramazzini and Richa learnt, and as experience has frequently ſhewn, in the ſame manner as happens in ſmall-pox. But on the eruption taking place, it is not neceſſary any

longer to purge the belly, unleſs ſome urgent ſymptom requires its being repeated, or new ſymptoms of a gaſtric colluvies ſupervene, indicating the neceſſity of it. But it is now better to adminiſter either cream of tartar, or tamarinds, in ſmall doſes, or *per epicraſin*; or, after the critical days, to gently open the belly, than to purge it violently. For I cannot approve of the practice of thoſe who purge the belly daily, or every ſecond day, neglecting and counteracting the the other efforts of nature. Nor can I agree with thoſe who, with Strack, propoſe repeating even ſtrong cathartics, becauſe they think that the petechiæ originate from vitiated chyle in the *primæ viæ*, nay, from a tenacious mucus adhering to the inteſtines. For how far ſuch an opinion departs from the truth, I think ſufficiently appears from the marks I have already delivered at length concerning the cauſes, but particularly from the circumſtance, that either purging the belly, or a diarrhœa ſupervening, has been obſerved to prove fatal in the petechial diſeaſe. Nor is it always ſafe, even when the petechiæ are produced, or kept up, by a gaſtric colluvies, to haraſs the patients with cathartics, properly ſo called, whatever Strack may ſay to the contrary. I ſhall willingly grant, that probably the bodies of the inhabitants of cold countries, who are accuſtomed to a hard, tough, thick, and fatty kind of

food, may be leſs injured by cathartics, than thoſe who live in the warmer latitudes, and are endowed with a more ſenſible temperament, and laxer fluids; ſuch as the Italians in general are, who certainly do not bear repeated purging without injury. There are caſes, however, in which, although no colluvies be preſent, it is allowable, in my opinion, to gently purge the belly, namely, when the petechiæ diſappear, and the diſeaſe takes a turn, or when a metaſtaſis to the internal parts, or to the head, is threatened, or when the urine, from being turbid and thick, ſuddenly becomes thin and crude, without any other excretion ſupplying its place *. But after having employed gentle purging, as I have ſaid, on the firſt days, clyſters alone, or purified whey, are found ſufficient to keep the belly open, or to gradually eliminate whatever remains of the diſeaſe may chance ſtill to lurk in the *primæ viæ* †.

* Roboret, l. c. c. 16. † Georg. Caſtanea Jannones, a Sicilian phyſician, has demonſtrated, by adducing a variety of inſtances, the injuries which were occaſioned by purging in the epidemy of 1764. *Epiſt. Theor. Pract. De Purg. Agend. Ration. &c.*

359. After bleeding, vomiting, or purging, if they have been employed, the reſt of the cure is performed by diluents, correctives, acidulous and gently diaphoretic remedies. Simple whey, or, if the debility requires it, that which is prepared with wine completely fulfils the intention. Van Swie-

ten, De Haën, and Haſenöhrl, give the preference to diluents, which alſo blunt the acrimony, as barley-water, that of ſcorzonera-root, marſhmallows, and the like. With this view I ſometimes find hyrogala employed; nor ſhould I be altogether averſe to it in ſuch as are accuſtomed to it, and not only bear the uſe of milk, but are very partial to it; as the patients treated by Cambieri * were, who uniformly requeſted to be allowed milk, and could not bear the whey. The acrid heat, burning thirſt, and tendency in the fluids to alkaleſcence, are wonderfully allayed and checked by melon, citron, or orange joice, added to the drink, or a little vinegar poured into it. When a greater cooling, checking, and antiſeptic power is required, ſpirit of vitriol mixed in large quantity with the drink, is generally recommended. But it aggravates the cough, weakens the irritability of the heart, and generally irritates and diſorders the ſtomach; nor do I think it can be adminiſtered with ſafety if any degree of inflammation is preſent. There is need, therefore, of great prudence to in ſome meaſure blunt its acidity, or to ſweeten, correct, and dilute it in ſuch a manner as to prevent its bad effects. On which ſubject I have already repeatedly delivered ſuitable obſervations in former chapters.

* In the *Opuſc. Med. Prat.* of Targioni, vol. viii. p. 286. 287.

360. Warm diaphoretics, and acrid alexipharmacs, which were formerly very much in uſe, are now generally condemned at the beginning of the diſeaſe as pernicious; we ought to except the caſe, however, in which the diſeaſe, as I have already noticed, ariſes from contagion. But at the height of the diſeaſe, and towards its concluſion, when the ſtrength is very much exhauſted, they may be employed ſomewhat more liberally, eſpecially if wine, or whey and wine, infuſions of carduus benedictus, and ruta capraria, have not proved ſufficient for raiſing the ſtrength and promoting the ſweats, which, during the remiſſion of the diſeaſe, are generally attended with advantage. But they ought to be gentle, uniform, and moderate, for thoſe which are too profuſe exhauſt the ſtrength more and more, and therefore prove very hurtful. They muſt not, therefore, be too much excited, nor called forth by too great heat of the chamber, or by increaſing the number of the bed-cloaths. I have ſometimes called forth the ſweat by the volatile ſalts, contrayerva, ſpirit of hartſhorn, ſp. Mindereri, and the like; but as ſoon as they flowed copiouſly, I dropt the employment of them, that the ſweat might not exceed bounds. While the patients are covered with ſweat, and the petechiæ are ſtill preſent, it is diſputed whether the linens ought to be changed. Experienced practitioners, if the ſweat is fetid, viſcid, and acrid, and the linens are not only

wet, but are covered with a filthy glutinous matter, or there is any fear of their cooling, do not hesitate about the propriety of changing them, providing the patients feel themselves at ease, and it is done with caution, and particularly at the time when the sweat ceases, or appears to be diminished *.

* Störck, *An. Med.* I. p. 75.

361. Blisters, in the same manner as in other exanthematic and malignant diseases, in the petechiæ also, both at their commencement, during their progress, and at their height, are universally employed: in the beginning, that the lingering eruption, and bad humour lurking in the system, may be quickly called out; during their progress, that the spots, if they have struck in, may be recalled; that the strength, if it is exhausted, may be roused; that delirium and coma may be prevented; and, lastly, that metastases may be avoided, and revulsion from the head or breast occasioned; at their height, that the system may be roused from its torpor and inactivity to attempt some excretion. The parts to which they are commonly applied are the arms and legs; but according to the various indications, and the nature of the parts affected, they may be likewise applied to many other parts, as the hairy scalp, the nape of the neck, the back, breast, wrists, ankles, or feet. Riverius observes, "When there is very great malignity, affecting

the whole body, and the patient is diſtreſſed with the moſt ſevere ſymptoms, one bliſter applied to to the neck is not ſufficient, but more muſt be employed. When the diſeaſe is very ſevere, I am in the habit of applying them to five parts, namely, to the neck, to the inner part of each arm, between the elbow and humerus, and alſo to the inſide of each thigh, between the groin and knee, with the greateſt ſucceſs *." Riverius's opinion and practice is confirmed by Ettmuller, who obſerves, " If there be any fever in which bliſters are proper, it is certainly the petechial one †." A great many other writers of high authority, who propoſe the employment of bliſters in this diſeaſe, might be adduced, but I ſhall paſs them over, to avoid prolixity. But although bliſters are with reaſon recommended by many, ſome find fault with them, or at leaſt qualify their approbation. It is a certain fact, that in ſome epidemies they have by no means anſwered the expectations formed of them. In the epidemic petechiæ which Petrus A Caſtro treated at Verona ‡, and in thoſe deſcribed by Ramazzini ‖, as well as thoſe of Turin, mentioned by Richa §, bliſters were not only uſeleſs, but even hurtful. There are therefore certain epidemics, in which bliſters have proved ſerviceable; and others in which they have had the oppoſite effect. It is of the greateſt conſequence to know the cauſe of this difference, that we be enabled at the proper time

to have recourſe to a remedy of ſuch immediate benefit. After carefully conſidering the hiſtories of ſeveral epidemies, it appears to me that bliſters afforded remarkable relief in thoſe epidemic petechiæ which were combined with an inflammatory diatheſis of the blood, or one approaching very nearly to it; but that they were attended with no advantage, or rather with a great deal of harm, when the blood was verging on diſſolution and colliquation. I would therefore adviſe young practitioners, before having recourſe to bliſters, carefully to inquire into the ſtate of the blood. On finding it firm and ſufficiently coherent, they may confidently apply bliſters; otherwiſe they ought to cautiouſly abſtain from their employment, that their patients may not be injured by them. But I do not wiſh them to conſider this rule as holding ſo invariably, that they ought never to depart from it, if any ſevere ſymptom occur, or the particular diſpoſition of the epidemy points out otherwiſe. For it is the buſineſs of a judicious practitioner on proper occaſions to depart from general rules.

* *Prax. Med.* l. 17 c. 1. p. 348. † *Oper.* vol. ii. P. 1. *Colleg. Pract.* c. viii. § 4. p. 398. ‡ L. c. ſect. vi. aph. xxx. ‖ *Diſſ. Cit.* § 30. § L. c. § 24.

362. It is not my deſign here to take a view of all the arguments which relate to the proper employment of bliſters, as I have already, in various parts of this work, touched upon them. I

ſhall take notice, however, of ſome cautions which have been left us by the very judicious Petrus A Caſtro. In the firſt place, he obſerves, that the *ſanguine*, or *bilious temperament*, do not ſo well agree with bliſters; but that they are better calculated for the *phlegmatic*, or *melancholic*, temperament*; becauſe the former is naturally better formed for motion, and does not require any incentive to it; and the latter being more ſluggiſh, has therefore occaſion for a ſtimulus. In the ſecond place, he remarks, that in bilious and dry habits, beſides watching and exceſſive pain, which bliſters cauſe, either ulcers, which are difficult of healing, or apt to degenerate into bad-conditioned ones, ariſe; or that, attracting none of the hurtful fluid, they diſappoint our expectations †. In the third place, he adds, that in melancholic and phlegmatic people, for whom they are beſt calculated, we muſt obſerve whether there be any ſcorbutic, or œdematous, ſwellings in the legs. For he mentions, that in ſuch a caſe bliſters have given riſe to incurable mortifications ‡. In the fourth place, that boys and old people, who are not, however, very far advanced in old age, and are of a moiſt habit of body, bear them better than thoſe who are of a dry habit and decrepid ‖. In the fifth place, that the beſt time for applying them is the beginning of the diſeaſe, not its height, nor when the patients are almoſt moribund §. For Trogher ¶ ſaw patients very much

relieved by blifters, when they were applied before the eighth day, but not later. Each of which remarks, however, have their exceptions, as all rules in medicine have; nor can theſe be unknown to a phyſician who conſiders all the circumſtances with due attention. It may be obſerved alſo, that every mortification ſucceeding the application of blifters does not immediately prove fatal. For ſometimes it indicates a metaſtaſis of the malignant and deſtructive fluid to the external parts of the body. But this is readily diſtinguiſhed from the former necroſis by the remiſſion of almoſt all the ſymptoms, and by the manifeſt renewal of the prevalence of nature. Laſtly, when it is doubtful whether blifters are admiſſible, it will be ſafer to apply fomentations, and epiſpaſtics,—of which there are various kinds, —to the legs and feet, to attract the noxious fluid downwards and outwards.

* L. c. ‡ *Ibid.* aph xxxii. † *Ibid.* ‖ *Ibid.* aph. xxxiii. § *Ibid.* aph. xxxiv. ¶ L. c.

363. Friction of the whole body, both dry and wet, if in any caſe, is of great advantage in the petechial diſeaſe. By means of it, when the ſpots are ſlow of breaking out, the practitioner endeavours to draw them forth, or when they retire, or are forced in, he attempts to recall them. The ancients uſed carefully to rub the body with their hands anointed. They

principally employed the ointment of Aetius, which conſiſts of water, oil, and nitre, boiled together, or otherwiſe mixed, and beat up. The moderns with that view employ Hungary water, or any ſimilar one, compoſed of ſome ſpirit and volatile matter; and ſome employ vinegar. The view of them all is the ſame, although the means employed are different. Without doubt, gentle, warm, and dry friction, opens the pores of the ſkin, promotes the perſpiration, and draws the fluids to the ſurface, and therefore aſſiſts the eruption. The friction which is performed with the unctuous liniments, ſoftens and relaxes the dry ſkin, but ſeems to obſtruct its pores, and the mouths of the perſpiratory veſſels. That again which is performed with ſpirits and other volatile things, does not obſtruct them, to be ſure; but I do not well know whether it coagulates or reſolves the fluids, whether it opens the veſſels, or rather ſhuts them by the ſtimulus it occaſions. But the ſame doubt may be ſtarted with equal propriety concerning the friction which is performed with *oxycratum:* for, although it cannot be denied that the vinegar poſſeſſes an antiſeptic property, which promiſes ſome advantage; yet its acidity and power of irritating are ſuch as to occaſion the corrugation and conſtriction of the veſſels and their orifices, which are unqueſtionably irritable. Add to this, that things which are cold in their

action repel, and that such as are moist, tho' warm, are apt to turn cold; and, lastly, that in consequence of the frequent, and often imprudent, uncovering and unavoidable exposure of the body to the air, the skin cannot fail to become spasmodically affected. On which account it is better to employ gentle and warm friction of the skin, or dry cupping-glasses, applying moderately warm linens to the skin, or, if the dryness likewise requires being corrected, placing bladders full of moderately warm water near the legs on both sides under the bed-cloaths, or applying fomentations for some time in such a manner, that the skin may be moistoned with a gentle vapour, without creating too great heat.

364. Concerning the drinking of cold water, as being in some fevers a most excellent remedy, and of immediate service, I have frequently spoken elsewhere, and especially in the first volume. It may likewise be sometimes allowed in the petechiæ, especially when they are accompanied with the *bilious* and *ardent* fever (par. 319.), which generally occasions great danger. In this fever, therefore, even when the eruption is going on, cold, or even ice-cold, water is recommended by some as being the only remedy. Roboret used to employ it with success in muscular, robust young men, labouring under the complaint, during the summer, accompanied with a very ardent fever, provided there were not present symptoms

of internal inflammation, and ſtraitening of the cheſt. He gave cold water to his patients even to ſatiety. But he adminiſtered it not only as a refrigerant, but alſo as an evacuant. On which account he preſcribed at leaſt twelve pounds in a ſhort time, to extinguiſh the heat, and promote ſome vomiting, or purging. When cold water was diſliked, he preſcribed four or five pounds of whey with the ſame view. Nor does Petrus A Caſtro think that this may be done only during the rage of the fever, and in the heat of ſummer, but likewiſe when "there is not great heat, or concoction of the humours;" for it has the power of wonderfully allaying the latent and peſtilential power of the fluids conjoined with a manifeſt quality, provided it be drunk off cold, and in great abundance, *i. e.* in as great a quantity as the patient can take in at a draught *. And he obſerves, as the vomiting which is excited by it is generally uſeful at firſt, provided it be copious, it muſt be given at divided intervals to produce vomiting; in the mean time adding ſeveral things with a view to the putrid miaſma, as drops of vinegar, or melon or citron juice, or vitriolic acid †. The ancients conſidered the increaſe of the diſeaſe as the time beſt adapted for that purpoſe. But in Italy, we give ice-cold water at any period of the diſeaſe, and employ it alone without any other aliment, or at leaſt with very ſpare diet, from the beginning to the

end of the diſeaſe, and by its means complete the cure, when the violence of the heat, the ſtrength, and the apprehenſion of putrefaction, indicate it. In this manner did Xaverius Bertini, a celebrated phyſician of Florence ‡, treat his own ſon when labouring under the complaint, without employing any other medicine; to ſay nothing of a variety of inſtances of ſuch cures, which are univerſally performed in Italy. This medicine, however, requires being employed by a prudent, ſkilful, and circumſpect phyſician, that no fatal conſequence may be the reſult of its uſe. Petrus A Caſtro has ſeen a good many ſuddenly deprived of life by the cold water being inconſiderately adminiſtered, the natural heat being extinguiſhed together with that occaſioned by the diſeaſe ‖.

* L. c. ſect. vii. aph. viii. † *Id. ib.* aph. ix. ‡ Martin Ghiſi, *Letter. Med.* lett. 1. p. 33. ‖ L. c. ſame ſect. aph. vi.

365. The peruvian bark, which was formerly employed as a ſpecific in removing intermitting fevers at leaſt, ſince its wonderful powers have been gradually diſcovered, has been transferred likewiſe to the cure of a good many other diſeaſes, ſo that it is by no means ſurpriſing if it does not hold the loweſt rank in the cure of the petechiæ alſo, not in conſequence of its febrifuge power, which both my own experience, and that of others, has ſhewn to be of no effect in this

caſe * (318.), but in conſequence of its antiſeptic, cordial, and antiſpaſmodic quality. De Haën, perhaps, was the firſt, as far as I know, who employed it very liberally, and in ſuch a doſe as had not been uſed before, in the malignant and putrid continued fevers, and with ſuch confidence, that he adminiſtered an ounce of its extract daily, during the whole courſe of the diſeaſe. After De Haën, Haſenöhrl and Störck attempted to oppoſe the petechiæ by employing the ſame remedy, and with equal liberality. And although, as appears from the clinical records of theſe authors, as well as De Haën, that the ſeverity and duration of the diſeaſe were not diminiſhed by it, all were convinced, that, in conſequence of its employment, ſcarce any, or at leaſt very few, died. In Sims, is to be found the deſcription of a particular epidemic fever, which proved ſo fatal, that he judged it to be in ſome meaſure of a peſtilential nature. It appears, in fact, to have been a malignant and putrid petechial fever, of a very bad kind. For, beſides the petechial ſpots which quickly appeared in it, the principal, and, as it were, pathognomonic ſymptoms were, the greateſt deſpair, and convulſive tremors, perpetually preſent, and increaſing daily to the end of the diſeaſe. At the very beginning, before the putrefaction aroſe, after letting blood once, and next exciting vomiting, he uſed to expoſe the patients to the open air,

as in ſmall-pox, and gave the bark in ſuch abundance, that they conſumed an ounce of it each day, nay, double or triple that quantity, or even more. He does not deny, that the febrile paroxyſms were at firſt aggravated by adminiſtering this remedy ſo liberally, but they afterwards gradually abated, or at leaſt, although the ſame degree of fever continued, the diſeaſe was at length ſucceſsfully reſolved without any one, to whom the bark had been adminiſtered, dying. It appears alſo, that the bark, as others had already diſcovered, when the ſtrength is exhauſted, when atony of the ſolids is preſent, when the nervous ſyſtem is affected with a malignant poiſon, when there is a tendency in the fluids to colliquation, and when mortification is apt to ſupervene, in the malignant, putrid, and, as it were, peſtilential petechiæ, is productive of the higheſt utility. I do not deny that there is ſometimes occaſion for employing a greater quantity, but I think that ſome moderation ought to be obſerved, that we may not unneceſſarily oppreſs our patients. For the efficacy of the remedy, if it be of a good quality, does not ſeem to conſiſt in employing a very large quantity, which very few can long bear without uneaſineſs, nauſea, vomiting, or looſeneſs, but in the prudent, well timed, and continued uſe of it. But when oppoſite affections and ſtates occur, by no means indicating tonics, cordial or antiſeptic remedies,

a prudent phyſician ought then to abſtain from the bark, or not to employ it ſo copiouſly.

* Ramazzini found the bark prove of little ſervice, even when the petechial diſeaſe was drawing to a cloſe; *Diſſ. Cit.* § 32. Likewiſe the anonymous author of the hiſtory of the epidemy which prevailed at Montecchi, as already noticed, and ſeveral others, have experienced its inefficacy. † *Malad. Epid.* p. 127.

366. Enough concerning the more remarkable remedies. It remains to ſubjoin, in a ſummary manner, ſome obſervations concerning the cure of certain ſymptoms which ſometimes require particular attention. But concerning the treatment of the watching, comatoſe affections, the pain, ulceration, and aphthæ of the throat; of the thirſt, and dryneſs of the tongue; of the hemorrhages, immoderate thirſt, looſeneſs, and ſuppreſſion of the urine; of the difficult reſpiration, infarction of the lungs, or peripneumony, the cough, catarrh, and worms, if they happen to be combined with the petechiæ; I have already ſo often ſpoken, and particularly when treating of the purple fever, meaſles, and ſmall-pox, that it would be almoſt ſuperfluous to touch on the ſubject here again, as the very ſame remarks would require being repeated. I ſhall ſpeak, however, of two ſymptoms which are not a little alarming, I mean the hiccup and flatulent dropſy of the belly. The hiccup, therefore, which precedes the appearance of the petechiæ, as well as the fruitleſs deſire to vomit, which frequently ac-

companies it, is generally occaſioned by mere irritation of the nerves, and is allayed by means of paregorics. But as there are alſo ſymptoms of a colluvies loading the ſtomach, it ought to be ſhaken off by employing a gentle emetic *. The hiccup, alſo, is not unfrequently occaſioned by worms; in which caſe anthelminthics cannot be omitted. But if inflammation of the ſtomach or inteſtines cauſes it, as ſometimes happens in an advanced ſtage of the diſeaſe, a fatal termination can ſcarcely be prevented. For, beſides bleeding, which however is ſeldom borne well, all demulcent and correcting remedies which produce revulſion, and cauſe a tendency to the ſurface, are moſt proper. Sometimes the petechiæ ſtriking in, or the fomes being retained, induce this fatal ſymptom; as appears from the petechial ſpots which are found after death, both in the inner ſurface of the ſtomach and inteſtines, and in other internal parts. In that caſe, gentle diaphoretics and muſk are generally recommended. And the convulſions, when they proceed from the ſame cauſe, are moſt ſucceſsfully treated in the ſame manner.

* Störck, *An. Med.* 1. *menſ. Decembr.* p. 42.

367. It is by no means an uncommon occurrence for a tympanitic ſwelling of the belly to ſupervene in this complaint generally on the ſecond week, as I have already remarked (327.). It is

commonly named *meteoriſmus*. It is occaſioned by air diſtending the ſtomach, or inteſtines, or both. It is always found in the cavity of theſe parts, and is either taken in along with the ingeſta, or is evolved from them by the heat, and remaining in the ſtomach. So long as it paſſes through them with freedom, and is compreſſed by the natural ſtrength and reſiſtance of the containing coats, by which it is prevented from expanding itſelf too much, the belly is not at all ſwelled, raiſed, or rendered tenſe. But if, in conſequence of a ſpaſm taking place in ſome part, the paſſage of the air through them be interrupted, it immediately becomes rarefied by the heat, expands, and endeavours to occcupy a greater ſpace, which cannot take place without a correſponding diſtenſion of the coats; hence proceed enormous flatulence and tympanitic ſwelling of the belly, in conſequence of which it is raiſed, and becomes tenſe. The ſame thing occurs if the tone of the ſtomach and inteſtines is weakened: for, on their elaſticity being overcome, the air is diſtended more freely, and, in order to make room for itſelf, it preſſes on, and violently diſtends all the ſurrounding parts. The firſt happens when the ſenſible and irritable parts of the ſtomach and inteſtines are affected in various and diſtant parts by ſome acrid principal; for inſtance, the bile, worms, retention of the excrements, ſaline, irritating, and cathartic medicines, or bad

fluids proceeding from the whole body to the inteſtines, or ſtomach. For it is well known, that theſe parts, when they are irritated, contract and completely ſhut themſelves. The other, again, happens when the power of the nerves belonging to theſe parts is reſolved by the malignant and poiſonous miaſma, or by any other cauſe, or the ſtrength of the fibres and coats, and their power of coheſion, is weakened, and almoſt deſtroyed, by the accumulation of ſtagnant and corrupted excrements, and their not being quickly paſſed. For putrefaction greatly weakens and diſorders the irritability.

368. In the firſt caſe, beſides the marks of the cauſes which I have already pointed out, the belly is frequently bound, or paſſes ſcanty, thin, acrid, burning, or mucous and bloody ſtools; the patients not unfrequently complain of gripes, pains, and teneſmus, and the abdomen is not only tenſe, and emits a tympanitic ſound, but likewiſe, when compreſſed, is either all over, or in ſome part, much more ſenſible and painful. In this kind of ſwelling, then, emollient, relaxing, demulcent, ſedative, and gentle purgative remedies, are indicated. Therefore warm, emollient, and diſcuſſing fomentations, ought to be applied to the whole abdomen; and internally lintſeed-oil, or oil of olives, ought to be occaſionally given in ſmall, but repeated doſes; and

bland injections of the decoction of mallows, or marsh-mallows, or chamomile, fresh butter, or lintseed-oil, ought to be administered. But if these do not relax the tension of the belly sufficiently, nor produce looseness, a little of Glauber's salt, or crystals of tartar, largely diluted with water, or an ounce or two of the syrup of succory, with rhubarb, or an infusion of tamarinds, may be taken off; or some simple honey may be added to the clysters, if there be no tenesmus present, that the excrements retained in the intestines, and irritating them, may be the more readily made to pass downwards. In this way not only does the swelling of the belly subside in a few days, but also the urine, if it had ceased to flow, begins to be discharged more freely. In the epidemy which prevailed at Fayence in the year 1759 and 1760, scarcely any of the patients who were affected with ischuria were obliged to have recourse to the catheter, although almost all of them, in consequence of the fomes of the disease passing from one place to another, were attacked with the swelling of the belly, and retention of urine (327.). But they were treated just in the manner recommended above. Trollius likewise successfully removed the swelling of the belly by means of fomentations *.

* *Raccolt. d'Opusc. Med. Prat. del* Sig. Targion. vol. viii. lett. i.

369. In the other case, that is, when the swell-

ing proceeds from atony of the inteſtinal canal, and dilatation of the air, in general the ſymptoms juſt now enumerated (367.), eſpecially the ſenſe of pain, are abſent; purging has been neglected; and the belly is bound. The tympanitic ſwelling muſt then be oppoſed in a very different manner. For if it is ſuſpected that the inteſtines ſtill abound with putrid excrements, from which a quantity of air is extricated, the belly ought to be firſt purged with repeated gentle ſtimulant injections, that it may be quickly freed from the putrid ſordes; next tonics ought to be employed both internally and externally. Beſides a little wine, which ſhould occaſionally be added to the drink, as raiſing the ſtrength, reſiſting putrefaction, and favourable to the irritability, camphor, ſcordium, chamomile, and the infuſion or decoction of peruvian bark, are preferable to any other internal remedy. But acids in this caſe, although inimical to putrefaction, becauſe they diminiſh the irritability, appear to be rather ſuſpicious. In their ſtead, the *liquor anodynus mineralis*, and *ſpiritus nitri dulcis*, given in peppermint-water, or in an infuſion of chamomile, are attended with advantage, and have a remarkable effect in diſcuſſing the flatus. Likewiſe, to clyſters compoſed of a decoction of ſcordium, chamomile, or peruvian bark, may be added camphor, which both checks putrefaction, reſtores the tone of the fibres, and rouſes the irritability. But in its employment,

both by the mouth and anus, ſome moderation muſt be obſerved; for, when given in too great quantity, it proves injurious to the head and nerves, and induces, or increaſes, the convulſions, which are ſo common. Some propoſe giving very cold water to be drunk, or to be thrown in *per anum*, and applied externally to the belly. But this muſt not to be attempted without mature deliberation, as it is not unattended with danger. It certainly appears better to have recourſe to the more uſual and ſafer remedies, than to attempt unknown, or doubtful ones. But if the belly be obſtinately bound, it ought to be opened with cryſtals of tartar, or ſal polychreſt, or rhubarb, in divided doſes, and given gradually. Laſtly, the abdomen ought to be fomented with warm wine, or a plaiſter of laurel-berries, or of galbanum, or ſome other cataplaſm poſſeſſing a ſtrengthening, or gently aromatic property, ſhould be applied to it. But it is of the greateſt conſequence to gently rub the whole belly with the dryeſt linen rags, perfumed with the vapours of amber. The ingenious Frambaglia drew out the air from the anus, by means of a common ſyringe introduced into it, thus gently producing a vacuum. In this manner he has obſerved the exploſion of a great quantity of air, ſhut up in the inteſtines, ſucceeded by a copious diſcharge of the excrements.

* L. c.

370. I paſs over that ſwelling which is ſuppoſed to be occaſioned by air ariſing from the circulating fluids in a ſtate of putrefaction, or which is cauſed by gangrene and corruption of the internal parts. For both the firſt, if it ever takes place in the living ſyſtem, and the latter, would be a diſeaſe, not only of the inteſtines, but of the cavity of the abdomen itſelf; nor would it leave any hopes of a recovery. I likewiſe paſs over various combinations of diſeaſes with the petechiæ, as every body muſt perceive, that they muſt likewiſe be attended to. Let us take for an example intermitting fever, which has been more than once obſerved to be conjoined with the petechial fever. It is immediately diſcuſſed by employing the peruvian bark. What remains of the diſeaſe is eaſily and ſucceſsfully overcome *. When the petechial diſeaſe is at length removed, the convaleſcents often remain lethargic, ſtupid, forgetful, and deafiſh. But theſe evils gradually go off of themſelves †. In others, œdematous ſwellings of the feet ſupervene, which, in like manner, are gradually reſolved, merely by the power of nature. In ſome patients Störck obſerved the face attacked with a white ſwelling. Such patients received relief from a bliſter applied to the back of the neck, and gentle ſtimulants ‡. Nor is it an uncommon occurrence for the diſeaſe to terminate in a ſcabby eruption, or for the lat-

ter to come on when it is already finiſhed. As it is critical, it ought to be allowed to go on, and not repelled by any topical application. But, if it is prolonged beyond the proper bounds, it is at length eradicated by whey, purges, and, laſtly, by the warm bath §.

* Störck, *An. Med.* 1. *Menſ. Octob. & Sept.* 1758, p. 28.
† Ramaz. *Diſſ. Cit.* § 24. ‡ Störck, *Febr.* 1759, p. 62. 63.
§ *Id. ib.* p. 26. and 60.

371. And theſe obſervations apply almoſt equally to the epidemic and ſporadic petechiæ. Nor do thoſe petechiæ require any other method of cure, which, on account of the badneſs of their diſpoſition, their greater contagiouſneſs, frequency, and mortality, are uſually called *peſtilential.* In a ſimilar manner, alſo, do we cure the hoſpital, jail, ſhip, or camp fevers * (348.), when they are of the petechial kind, as is generally the caſe; unleſs that in theſe laſt, the renewal and changing of the air is ſo neceſſary, that, without it, it is impoſſible to check either the violence of the diſeaſe, or the contagion. The patients muſt then be carefully ſeparated from people in health, and, if poſſible, ſhould be removed into larger apartments, and into open, freely-circulating air; and they ought not to be crowded together in the ſame place.

* The hoſpital-fever has been treated of particularly by Pringle, who ſeems to have comprehended both kinds of it, namely, the *petechial fever*, and the *malignant ſlow nervous* one,

or *typhus*, under a particular head: *Vid. Diſeaſes of the Army.* In the year 1779, a commentary on the hoſpital-fever was publiſhed by Sebaſtian Cera, a very experienced phyſician of Milan, in which he deſcribes the fever in ſuch a manner, that whoever reads the hiſtory of the petechiæ which I have given, muſt at once confeſs, that they are in fact the ſame kind of complaint. In the ſame commentary, lately reprinted, and very much enriched with the obſervations of Tiſſot, at that time Regius Profeſſor in Pavia, is to be found an appendix concerning the jail-fever, which is very like the hoſpital one. But, among others long before him, Sydenham has left us an account of the *contagious* and *peſtilential jail-fever (Obſerv. de Aëre & Morb. Epid.)*, as alſo another of a *ſhip-fever*, which was almoſt peſtilential; and whoever deſires more ample information may conſult theſe paſſages.

272. With reſpect to the kind of diet, it ought to be ſpare, but refreſhing, and antiſeptic. On the whole, vegetable diet, as barley-water, water-gruel, or that of rice, and the expreſſed juices of theſe, are preferable. Wine and whey anſwer the purpoſe of both food and drink in ſome patients. Animal food is generally conſidered as being bad, becauſe it is ſuppoſed to become alkaleſcent, and to putrefy ſooner. The climate, however, the patient's habits, and peculiar diſpoſition, muſt be taken into conſideration. Weak chicken-broth, ſoups of the crumbs of bread boiled with fleſh, yolks of eggs diſſolved in water prepared with melon-juice, and ſweetened with ſugar, prove very reſtorative to ſome patients whoſe ſtrength is exhauſted. The addition of the vegetable acids will in ſome meaſure pre-

vent the danger of alkaleſcence, although, by means of the digeſtive power of the ſtomach, if it has not intirely left the patient, they are ſo changed that they cannot readily become alkaleſcent, or corrupt. Others prefer drinking wine in large quantity, which alone ſupports and refreſhes them. But reſt, cleanlineſs, and the frequent changing of the bed and linens, claim the principal attention. Likewiſe the air of the chambers ought to be frequently renewed, and impregnated with the fumes of vinegar, juniper-berries, and the like. Water alſo imbibes the impurities of the air. The mephitic effluvia are ſaid to be abſorbed and corrected by growing plants, if they are expoſed to the rays of the ſun. The patient's chamber, therefore, ſhould be ſufficiently provided with them.

373. Nor is the phyſician to attend merely to the patients, but he muſt likewiſe take care of himſelf, and of thoſe in health around them. Hence Platner has obſerved, " Such as wiſh to remain free of this diſeaſe ought to avoid damp apartments and air; they ought to cover themſelves well, frequently changing their linen and other cloaths, and expoſing them to the air, particularly if they are obliged to be much among the ſick; they ought to refrain from venery, too much eating, and other things by which the body is debilitated. Among the other prophylactic means, as they are called, the beſt is found

to be a glaſs of Rheniſh wine, and tranquillity of mind *." But beſides carefully attending to theſe cautions, it is alſo of great ſervice, as I have repeatedly learnt from my own experience, to frequently waſh the mouth, face, noſtrils, and hands, with water, wine, or vinegar; to keep the bed-chambers clean; to air them well; to impregnate them with the vapours of very ſharp vinegar, or reſinous perfumes; to have the excrements quickly removed; not to eat or drink near the patients; to ſpit out the ſaliva frequently, that it may not be ſwallowed infected; to ſpeak to the patients, and feel the pulſe, with the face turned from them, or inclined to one ſide; to ſtand between the window, or door, and the patient, that the effluvia of the patients may not be carried by the direction of the air to the phyſician; and to avoid remaining long among them. But when it becomes neceſſary to examine the patient more narrowly, or to inſpect the ſkin, tongue, or hypochondres, he ought to keep in his breath, that he may not inhale the vapour, or halitus, immediately proceeding from the infected body. While the petechiæ are prevailing epidemically, thoſe perſons in general are ſuddenly attacked with the complaint who have imprudently expoſed themſelves to cold, wind, or to the damp night-air, and ſuffered a ſuppreſſion of the perſpiration. It is, therefore, probable, that if any noxious miaſma has paſſed into

the body, it is gradually diſperſed by the vital powers, without injury, through the perſpiratory pores, while they are ſufficiently patulous; but that, when they are obſtructed, it is retained and accumulated in ſuch a manner, that the quantity of the contagion becomes ſufficient for infecting and undermining the ſyſtem. On which account the perſpiration muſt be purpoſely promoted as much as poſſible; which is principally done by avoiding the cauſes which check it, and occaſionally taking diaphoretics. I have ſeen a little camphor ſwallowed at bed-time, or an infuſion of chamomile, ſcordium, and elder-flowers, taken in bed in the morning, prove highly ſerviceable. Some recommend either ſimple vinegar, or that which is prepared with alexipharmac infuſions, to be occaſionally drunk off, and are of opinion, that the ſeptic principle, which they ſuppoſe to be of an alkaline nature, is thus changed and neutraliſed. For I have known ſome people, who, to inſure themſelves againſt the complaint, for a long time were in the habit of every day ſwallowing a glaſs of the beſt vinegar, on an empty ſtomach, and nevertheleſs were attacked with it moſt ſeverely, and even died. I have found the moderate and daily employment of the peruvian bark more uſeful as a preventative. In the petechial epidemy of the years 1752 and 1753, in which the petechiæ were combined with a gaſtric colluvies and worms, Trogher employed with

great ſucceſs prophylactic pills, compoſed of camphor, extract of ſcordium, mercury, worm-ſeed, rhubarb, ſenna, or cryſtals of tartar, by means of which he mentions that worms were frequently paſſed †. He likewiſe took care to prevent the linens of people in health from being waſhed along with thoſe of the patients, and that the cloaths, blankets, ticks, or bolſters, which the patients had uſed, ſhould not be employed by healthy people, until, after being well waſhed and ſhaked, they were long expoſed to the open air: which ought to be particularly obſerved by ſuch as have the management of hoſpitals. Bleeding was never found to be hurtful in plethoric patients, nor purging, when the *primæ viæ* abounded with a colluvies. It was not unfrequently obſerved, however, that after giving a cathartic by way of preventative, the fever immediately ſupervened, the miaſma being probably received more readily, or more ſpeedily forced to the internal parts, in conſequence of it. I ſhould, therefore, conſider vomiting as preferable to purging.

* *Ars. Med.* † L. c.

THE BENIGN PETECHIÆ,

ILLUSTRATED BY EXAMPLES.

374. DAMILANI mentions, that during the prevalence of the complaint he obſerved ſeveral boys affected with fever, and completely covered from head to foot with ſuch mild petechiæ, that they walked about the ſtreets, and recovered per-

fectly, almoſt by the aid of nature alone; while in the mean time others affected with the malignant petechiæ and putrid fever were expoſed to imminent riſk; nay, a great many of them were actually cut off *.

* L. c. p. 130.

375. Haſenöhrl has deſcribed two kinds of petechiæ in the epidemy which prevailed in the years 1757, 1758, 1759, which raged at Vienna *; the one of the benign, and the other of the malignant kind. The mild kind betrayed itſelf by the following marks. In ſome it began with coryza, which was probably owing to the cold weather, for it was the winter-time, attended with an *obtuſe pain and heavineſs of the head;* in others with rheumatic pains all over the body, debility, and ineptitude to motion; in ſome it firſt appeared with anxiety of the præcordia, ſlight nauſea, loathing of food, and vomiting. "Moſt frequently, however, it began with great and ſudden loſs of ſtrength, anxiety about the præcordia, unuſual weakneſs of the limbs, without any manifeſt cauſe, heavineſs of the head, ſlight thirſt, or none at all, *heavy eyes, and a dejected face;* which ſymptoms ſucceeded both to ſlight ſhivering and heat; and the pulſe was found quicker than uſual. Theſe ſymptoms generally continued to the fourth day, with ſuch lenity that many believed the violence of the diſeaſe to be broken, and aſcribed its cauſe to ſome external error committed; but ſhortly after the patient's ſick-

neſs increaſing, the ſymptoms were greatly aggravated, watching, delirium, and tinnitus aurium being ſuperadded, and fixing the patients down to their bed. The ſymptoms hitherto enumerated, have been very carefully collected from more than a hundred caſes. When the diſeaſe proceeded regularly, upon the fourth, or at moſt upon the ſeventh day, there appeared an eruption of ſpots of a bright red colour, attended with *relief to all the ſymptoms*, at one time reſembling ſmall punctures, ſometimes more extenſive, particularly conſpicuous on the neck, breaſt, and *ſcrobiculus cordis*; ſhortly afterwards they appeared diffuſed over the reſt of the body, and the extremities; the ſkin became moiſt, the urine departed little from its natural condition, and generally ſhewed a cloud ſuſpended in it; the eyes, hitherto dull, at length turned more lively; the mind became ſettled; the pulſe, which was formerly weak, roſe; the other ſymptoms, as the watching, delirium, thirſt, and *tinnitus aurium*, either ceaſed intirely, or at leaſt very much abated; the functions were performed with greater alacrity; the petechial ſpots gradually faded in colour: at length, on the fourteenth or ſeventeenth day, they diſappeared intirely, or ſeparated with a ſlight deſquamation of the ſcarf-ſkin; the appetite and ſtrength returned. The heavineſs of the head, or the vertigo, dulneſs of the ſight and hearing, ſwelling of the legs, and extreme ineptitude to motion, as being ſymptoms

proceeding from the ſtrength being exhauſted by the diſeaſe, gradually diſappeared, and cauſed little trouble to the phyſician. Such was the mildeſt courſe of the diſeaſe."

* *Hiſt. Med. Febr. Petech. &c.* cap. 2.

376. The ſpring of the year 1765, at Tyrone, in Ireland, was extremely healthy. Scarcely any diſeaſes, except ſome petechial fevers, were obſerved to prevail. But theſe were ſo mild, as ſeldom to require medical aid, on account of their not being attended with any dangerous ſymptom. For, during their whole courſe, the pulſe was ſufficiently full and regular, the reſpiration eaſy, the mind tranquil, the thirſt moderate, the ſkin and tongue ſoft and moiſt. They were reſolved by profound ſleep, which laſted ſeveral days. "I confeſs," ſays Sims, who had an opportunity of obſerving theſe petechiæ, "it ſerved to puzzle me not a little. The firſt patients which I met with in the diſorder, being covered with theſe ſpots, I became alarmed for their ſafety; but not exactly knowing what courſe to take, I reſolved to leave the matter intirely to the conduct of nature. This I accounted better than, by pretending to aſſiſt where there was no certain indication pointing out what was to be done, to run the hazard of counteracting any of her operations. I was more confirmed in this method during the continuance of the diſeaſe, by never obſerving any other dangerous ſymptoms accompanying it; the pulſe re-

mained throughout tolerably full and regular, the breathing eaſy, head free from delirium, thirſt not great, and neither ſkin nor tongue very dry. As the inclination to perform too little is not in general to be objected to the medical tribe, ſo I have known ſome low retainers to it, who, by bliſters and cordials, endeavouring to rouſe their patients from this comatoſe ſtate, brought them into imminent danger. It is true, they acquired more honour afterwards by recovering ſome perſons from a ſituation almoſt deſpaired of, but the traffic is a diſingenuous one, below any perſon of a liberal mind; and it is, beſides, very unſafe, as in ſome time people muſt perceive that the patients of nature come eaſier off than thoſe of the doctor." So far he obſerves. Hence, in the treatment of ſuch diſeaſes, when they prevail epidemically, phyſicians who are not over officious, and too much addicted to employ medicines and other active means, are generally of more ſervice to their patients than others. In fact, poor people generally recover ſooner in theſe caſes, on account of not poſſeſſing the means of employing apothecaries, to haſten their death by loading them with their drugs.

* Sims *on Epidemic Diſorders.*

377. The petechiæ, the hiſtory of which I do not conſider it as foreign to the ſubject to ſubjoin here, were, in a manner, of an intermediate

kind, if not intirely benign, between the benign and malignant ſpecies. The year 1751, which preceded, approached to being wet, rainy, and variable. In the winter which followed, a great deal of rain and ſnow fell, and it was exceedingly variable. The ſtationary diſeaſes then were catarrhs, pleuriſies, and peripneumonies, which in general were very much relieved by diluents and bleeding. In the ſpring of the year 1752, the inflammations which I have mentioned began gradually to diſappear. But in their ſtead the *inflammatory fever*, or *ſynochus putris* of the ancients, came on. It again was characteriſed by a threefold diſtinction; it was either very mild, or ſevere, or exceedingly ſevere. In it the blood, when drawn, always appeared denſe, coagulated, and covered with the buffy coat. Afterwards another fever began to prevail, which at firſt appeared mild, but ſhortly after became ſevere and dangerous, being attended with ſymptoms which reſembled the continued malignant ſlow fever. As it partook of the diſpoſition of the preceding diſeaſes, it was therefore combined with an inflammatory diatheſis of the blood, and threatened the brain and fauces in particular with inflammation. To cure it, therefore, repeated, but gentle and cautious bleeding, was neceſſary. This fever completely diſappeared in the month of May. But it was ſucceeded by petechiæ, which were ſo univerſally diffuſed as to become almoſt epi-

demic, and obſerved the following courſe: The diſeaſe commenced with ſlight cold, or ſhivering, which was either preceded, or ſhortly after followed, by painful laſſitude all over the body, accompanied with loſs of ſtrength, reſpiration attended with ſighing, a wan countenance, very much altered from its natural appearance. The pulſe at firſt was ſmall, low, irregular, unfrequent, and ſomewhat hard; nor did it afterwards change in the progreſs of the diſeaſe. In ſome patients, however, during the two or three firſt days, it was great and ſtrong, but afterwards became depreſſed, ſmall, and weak, as in the other caſes. In not a few inſtances it ſcarcely differed from the natural pulſe, and was apt to miſlead by its deceptious appearance. There were ſome, however, but very few, who, during the whole courſe of the complaint, had a great, ſtrong, and very quick pulſe. But in ſuch patients ſome internal viſcus was always inflamed, and the blood, when drawn, was without ſerum, very compact, and appeared covered with the inflammatory cruſt. The fever, which had come on with the ſymptoms already enumerated, generally obſerved the type of a continued quotidian, or amphimerina, ſometimes of a continued ſimple or double tertian, or tritæophya. In all of them there was a moſt obſtinate headach; and the temporal arteries beat much more violently and frequently

than thoſe of the wriſts. Moreover, the ſymptoms of common occurrence were, ſighing, groaning, and complaining without any evident reaſon, ſtupor, great thirſt, but at the ſame time accompanied with an averſion to drink, redneſs of the cheeks, more manifeſt during the paroxyſms, fear, deſpair, flatulency, and eructation. To the ſtupor was gradually ſuperadded, perturbation of mind, incoherent ſpeaking, accompanied with conſtant watching, a tremulous, ſqueaking voice, tenſion of the hypochondres, conſtant toſſing of the hands and arms, anxiety, and a copious diſcharge of urine, depoſiting a ſcanty, white, ſmooth ſediment. The watching was next ſucceeded in the courſe of the complaint by delirium, properly ſo called, or deep ſleep, ſilence, deafneſs, and the vain perſuaſion of the enjoyment of perfect health. Some, at the very beginning, complained of a bad taſte of the mouth, nauſea, and a deſire to vomit; while others remained perfectly free of theſe ſymptoms. Some, whoſe pulſe appeared to depart little from its natural condition, were on a ſudden attacked with violent delirium, at firſt at intervals, and afterwards becoming conſtant; from which, however, I have never obſerved any bad conſequence to ariſe. The ſkin was almoſt uniformly ſcorched with an acrid, burning heat, which proved ſtill more troubleſome to the head, back, loins, and inter-

hal parts. The tongue underwent great changes, according to the different ſtages of the complaint, and the diverſity of the patient's temperament and habit. For at one time it was parched and white, at another time red, as in health. From the fourth to the ſeventh day, after anxiety and oppreſſion of the præcordia, the petechiæ broke out on the back, breaſt, and afterwards all over the body, ſmall, red, or of a light roſe or paliſh colour, more or leſs numerous, according to the greater or leſſer violence of the diſeaſe. After which the reſpiration became freer and more eaſy; the ſkin ſofter and moiſter; the ſenſe of heat felt in it became milder, and the fever therefore abated. The ſpots remained a whole week more, at the end of which generally a copious ſweat took place all over the body, and the fever itſelf, along with all its ſymptoms, gradually diſappeared. Such was the moſt uſual termination of the diſeaſe. Inſtead of the ſweat, in others a copious diſcharge by the kidneys took place, which, in addition to the petechiæ, proved critical. In a very few inſtances a diarrhœa ſupervened, and only in thoſe in whom a gaſtric colluvies at the ſame time was preſent. Not a few, during the progreſs and at the height of the diſeaſe, that is, on the ſecond or third week, if the diſeaſe proved tedious, were attacked with a pain of the throat, difficult deglutition, hoarſe-

neſs, and a catarrhal cough, but without being attended with any danger. Nay, theſe ſymptoms afforded a favourable prognoſtic, as in a ſhort time they put a period to the diſeaſe. I muſt not omit to mention, however, that there were ſome, though few in the town, who, being oppreſſed with profound ſleep, with a hoarſe voice, and almoſt deprived of ſpeech, lying upon their back, and conſtantly haraſſed with ſubſultus tendinum, paſſed thin, crude, and watery urine. All of theſe, notwithſtanding of every remedy, died about the ninth, tenth, or fourteenth day. Many were attacked with a hemorrhage from the noſe, even though a ſufficient quantity of blood had been drawn at firſt: this always afforded great relief. The whole illneſs was terminated in two or three weeks at the fartheſt. But if it ever exceeded theſe bounds, it happened only when worms were conjoined with the diſeaſe, the preſence of which was at length demonſtrated by their being paſſed by the anus, or mouth. The complaint was communicated by contagion to the domeſtics and viſitors, eſpecially ſuch as attended the patients, or approached them too near, and continued long in their bed-rooms. But this contagion was principally manifeſt among thoſe who lived in narrow, low-roofed houſes, ſuch as the poor people and artiſans, who were obliged to live in the ſuburbs, or in narrow, low dwellings. It remains for me to mention the

method of cure which was found moſt uſeful. Immediately at the beginning of the diſeaſe, when the headach, heat, and throbbing of the temporal arteries, were violent, blood was let; the quantity of which was regulated by the patient's age, temperament, habit, and the pulſe; and it was even repeated, if neceſſary, until the headach, heat, and throbbing of the arteries, were removed, or at leaſt very much abated. One or two bleedings, and indeed ſparing ones, were generally ſufficient, that the ſlight degree of remaining ſtrength might not be too much reduced. Neither did the ſmallneſs of the pulſe, nor the good condition of the blood firſt drawn, deter us from veneſection, provided it was ſparing and moderate; for the vital powers ſeemed rather oppreſſed than reſolved, and the blood was ſo far from being thin and diſſolved, that when drawn a ſecond time, or after the febrile motion had continued a few days, it congealed into a tenacious, firm, denſe maſs, frequently covered with the inflammatory cruſt. The blood was therefore let, though always very cautiouſly and ſparingly, when not only the head was affected with an acute throbbing pain, but alſo when the external heat exceeded bounds, —which it almoſt always did,—or the patients felt a ſenſe of burning internally: and it was ſtill more neceſſary, if a great and ſtrong pulſe, violent fever,

and ſymptoms of the inflammation of ſome viſcus, indicated the propriety of it, in which caſe it was better to let blood liberally. But if ever bleeding appeared to be not ſufficiently indicated, or was not ſufficiently well borne, to prevent the headach and violent heat, cupping-glaſſes were applied to the back and ſhoulders, or one large one was fixed to the occiput, that by drawing blood from the neighbourhood of the part, it might afford relief to the headach. But if it was not ſufficiently prevented by theſe means, it was not unattended with advantage to apply leeches to the temples, or noſtrils, particularly when ſome drops of blood ſhewed an effort of nature tending to that part. It will perhaps appear ſtrange, that bleeding, which experience has often ſhewn to be hurtful in the petechial diſeaſe, under my own management was generally attended with advantage. But it muſt be obſerved, that the diſpoſition of the preceding diſeaſes, which were all inflammatory, and the ſpring-time, which favours plethora, and the morbid affections depending upon it, were the reaſon why not only the brain, but alſo the other viſcera, were affected with ſome degree of inflammation, and therefore bleeding, notwithſtanding of the ſmall, low pulſe, was not only ſerviceable, but neceſſary. Hence, when it was really indicated, or cupping-glaſſes did not ſeem to anſwer the purpoſe, it was not even omitted when the eruption was

going on, or looſeneſs was preſent. Nordid any bad conſequence ever reſult from this pratice. In a word, that method of cure was employed which is ſucceſsfully adopted in other exanthematic diſeaſes, and particularly in the cure of ſmall-pox. Every body knows, that even during the eruption in the ſmall-pox, blood is drawn with ſafety, if the patient is plethoric, if violent fever, conſiderable delirium, difficult reſpiration, or the riſk of peripneumony ſupervening, point it out, as I have elſewhere noticed. In the beginning, in like manner, after blood has been once or twice drawn, when it had appeared neceſſary, the belly was purged in ſuch as complained of a bad taſte in the mouth, and nauſea, or perceived a ſenſe of weight about the epigaſtrium, or when there were other dyſpeptic ſymptoms. Rhubarb, conjoined with ſome neutral ſalt, when the diſeaſe was combined with worms, was conſidered as being preferable to other cathartics. The head was very much relieved, and the watching diminiſhed or removed by tepid bathing of the feet, or fomentations applied for a length of time to the legs, by ſinapiſms and emollient cataplaſms. When the patients were in a ſtate of ſtupor, and lethargic, they received no ſmall benefit from the ſame clyſters, but of the acrid and exciting kind, ſo that there was never occaſion to employ bliſters. Beſides, ſubacid and nitrous diluents were given

to be drunk, not only on the firſt week, but alſo on the ſecond, as far as the patients, who were generally averſe to drinking, could be prevailed upon. But as, on the ſecond week, the vital powers were depreſſed more and more, and ſeemed, as it were, to ſink, we took care to rouſe them by means of ſome cordial mixture, and ſmall doſes of the volatile ſalt of hartſhorn, or vipers, providing violent delirium was not preſent. Sometimes pills, compoſed of the powder of contrayerva-root, and the extract of carduus benedictus, and ſcordium, &c. were given. By means of which, not only the ſtrength was raiſed, but alſo ſweating, to which there was a ſpontaneous tendency in the ſyſtem, was called forth, attended firſt with relief to the diſeaſe, and next followed by its reſolution. But as the ſweat was very apt to become too profuſe, we employed cordial and diaphoretic remedies with circumſpection; and as ſoon as we attained the deſired effect, we conſidered it as proper quickly to deſiſt from their employment, that the patients might not become faint from too great profuſion of the ſweat. But if any languor aroſe from this cauſe, and it was neceſſary to conſult the ſtrength, this was beſt done by employing good old wine. When the fever at length terminated, in ſome patients the nauſea and loathing of food ſtill remained. Theſe were relieved by giving rhubarb, conjoined with neutral ſalts, for ſome days, *per*

epicraſin. Thus, if I miſtake not, have I given the hiſtory of the *eſſential* petechiæ, which, on account of attacking many at the ſame time, and eaſily paſſing by contagion into healthy bodies, may be called epidemic and contagious; and I have conſtituted a ſpecies, if not of an abſolutely benign kind, at leaſt of an intermediate nature between benign and malignant, 1. becauſe they proceeded very regularly; 2. becauſe their eruption always cauſed ſome relief, both to the fever and ſymptoms; 3. becauſe they proved fatal to very few, and ſeemed to be very far removed from that colliquation of the blood which frequently occurs in malignant, putrid, and anomalous diſeaſes, and from their pernicious nature, which is generally attended with the very worſt ſymptoms.

THE MALIGNANT PETECHIÆ,

IN LIKE MANNER ILLUSTRATED.

378. In the year 1590, at Trent, the ſummer was very dry and warm, the autumn was in a great meaſure like it, and the winter very cold and ſnowy. A ſcarcity of proviſions prevailed. Hence next year epidemic diſeaſes of a bad kind prevailed, not only among the common people, but alſo among thoſe of condition. In particular, as Roboret * informs us, "there were fevers which at firſt came on almoſt inſenſibly, with ſlight ſhivering, gradually ſucceeded by heat, which during the firſt days was not very trouble-

ſome, but in general attended with headach: But in ſome patients on the fourth day, in others on the ſixth and ſeventh, watching, and very violent delirium, or deep ſleep, from which the patient can ſcarcely be rouſed, ſupervened. In all of them, however, about the ſixth or ſeventh day, in a few on the fourth, petechiæ, not unlike flea-bites, generally of a red colour, ſometimes however livid, appeared chiefly on the back and breaſt. Along with theſe, in general, came on pains and inflammations in the throat, cough, with expectoration; in ſome, alſo, loſs of the voice, with that of the power of deglutition; dry tongue, thirſt; in ſome, bilious diarrhœa, but not a colliquative one; in a great many, worms paſſed both upwards and downwards, copious and generally ſalutary hemorrhages from the noſe; in ſome, alſo, particularly after the deep ſleep, ſwellings of the parotid glands, by which the patients, in like manner, were reſcued from the diſeaſe, took place. In ſome patients, likewiſe, although the internal parts were ſo ſcorched, that the tongue appeared perfectly parched, and ſometimes cracked, the external parts were as cold as marble. Some of the patients, during the whole courſe of the diſeaſe, paſſed urine of a healthy appearance. Others, until the ſixth or ſeventh day—for upon thoſe two days, chiefly, great changes took place—voided it clear, thin, for two or three days very turbid and thick, not unlike an infuſion of red chiches; and thus va-

rious changes took place in different patients, according to the difference of their nature, the weakneſs of the parts, and the quality of the predominant fluids. Sanguine and ſquare-built perſons run the greateſt riſk, and were infected ſooneſt; and theſe diſeaſes were clearly obſerved to ſpread by contagion to the next perſons. And although even many betook themſelves to bed ſucceſſively, in the ſame houſe, moſt of them, particularly thoſe who attended to the phyſician's advice, and conſulted their own welfare from the beginning, recovered; inſomuch that even at the height of the diſeaſe, out of ten or twelve patients, only one died, and the opulent, and people of rank, run greater riſk than the commonalty, as a much greater number of them, at leaſt making allowance for the difference of numbers between them, died. And thoſe patients ſeemed to be moſt ſeverely affected, who laboured under any other taint, particularly a ſyphilitic one: and almoſt all thoſe who died, expired in convulſions, with the urine ſuppreſſed, or were ſuffocated. But thoſe who recovered from the diſeaſe, generally remained for ſome time dull of hearing, and half ſtupid; and in a great many of them the hair fell out." So far does the author proceed. He then adds, that the petechiæ, when they appeared prematurely, were of a worſe kind, and afforded no relief *, and that the diſeaſe was never reſolved by the

eruption alone, unleſs ſome copious evacuation took place by the belly, or kidneys, or a hemorrhage came on ‡; although in the ſame place he does not deny, that an eruption of the petechiæ, eſpecially when conjoined with ſweat, ſometimes broke the force of the diſeaſe ‖; from which we learn, that the petechiæ which then prevailed were generally malignant, very ſeldom benign.

* *De Peticular. Febr.* an. 1591. c. i. † *Ibid.* c. xii
‡ L. c. c. xv. ‖ Same chapter.

379. But Haſenöhrl has given a much more accurate deſcription of the malignant petechiæ, obſerved at Vienna in the years 1757, 1758, 1759, which I have already mentioned *. In them, at the very beginning of the diſeaſe, " all the ſymptoms were more violent than in the benign petechiæ which have already been deſcribed from the ſame author (375.); nor were they much alleviated on the eruption taking place. The ſpontaneous laſſitude increaſed daily, the *tinnitus aurium*, and intenſe headachs, yielded to no remedy; the oppreſſion of the præcordia, difficulty of breathing, the conſtant cough, ſometimes accompanied with expectoration, but generally not, the *ſubſultus tendinum*, and the mind being diſordered, threatened a fatal termination. To theſe ſymptoms were added long-continued watching, followed by delirium, ſometimes during the increaſe of the diſeaſe, ſome-

times at its height, ſometimes milder, at other times more violent, occaſionally degenerating into downright fury, under the influence of which the patients ſtarted up out of bed, and performed the actions of the ſtrongeſt men: which I remember to have obſerved in four ſoldiers, in ſo much that, burſting their bandages, they attempted eſcaping; and I have ſeen them actually expire in this ſtate of phrenzy. I have obſerved others on the fourth, fifth, and ſixth day, overwhelmed with conſtant and deep ſleep, and ſlightly delirious, who were relieved by a ſweat breaking out on the ſeventh or ninth day, accompanied with the eruption of the petechiæ. The tongue was generally moiſt, leſs frequently dry, covered with mucus, ſometimes brown; the thirſt was not great, ſeldom intenſe; the eyes were languid, and dull; the hypochondres were inflated, tenſe, and ſometimes painful; the belly in a great many caſes was bound, ſometimes looſe; the urine was at firſt crude, thin, colourleſs, ſometimes bloody, or brown, at the height of the diſeaſe critical, and depoſiting a laudable ſediment; the ſweat ſometimes appeared ſpontaneouſly, and equally diffuſed all over the body, and, when critical, always attended with advantage; ſometimes, eſpecially previous to death, when the whole body ſeemed to melt into very fetid ſweat, it broke out and indicated the greateſt danger. The pulſe was at firſt quick-

er than uſual, but ſoft; in ſome it was hard; in the progreſs of the complaint it was quick, intermitting, weak, and irregular. Moreover, in ſuch as laboured under the above mentioned complication of ſymptoms, either the eruption did not break out at all, or it appeared of a purple, livid, or black colour: which laſt was of very rare occurrence; for I obſerved it really black in only two ſoldiers. Or only the veſtiges of the eruption appeared, but deep ſeated under the ſkin, and generally indicating a fatal termination; for it implied, that the powers of nature had been overcome by the violence of the diſeaſe, and were incapable of propelling the hurtful matter to the ſurface. Likewiſe the ſudden diſappearance of the eruption proved fatal: for it gave immediate riſe to very pernicious ſymptoms; the reſpiration became frequent, panting, and irregular; the pulſe weak, quick, and intermitting; a cold ſweat broke out on the forehead and neck; and death at laſt ſupervened. Although the eruption of the petechiæ took place immediately after, all the ſymptoms continued obſtinately for ſeveral days; nor did the medicines employed produce any remarkable change for the better; in conſequence of their employment generally upon the ſeventeenth day, ſeldom latter, ſwellings of the parotid glands took place, with ſome abatement of the fever and

other ſymptoms. When left to themſelves, the ſwellings of the parotids, as I have frequently obſerved in the Spaniſh hoſpital, in conſequence of a ſucceſsful effort of nature, ſometimes retired in, when a diarrhœa or a copious diſcharge of thick urine ſupervening, terminated the complaint. Sometimes they aſſumed a ſcirrhous hardneſs, which no emollients could reſolve; or when treated with cauſtics, they degenerated into ill-conditioned ulcers. They ſometimes ſwelled to ſuch an enormous degree, as ſuddenly to choke the patients. I found the event turn out moſt favourable, when they were quickly brought to ſuppurate, and an outlet was made for the matter. But not only was the morbid matter transferred to the ears, but it likewiſe attacked other parts of the body, ſuch as the legs, thighs, axilla, face, and noſe, &c.

* *Hiſt. med. cit.* c. 2. p. 267. *in Faſcic.* 1. *Op. min. med. et diſſert.* Franc. Xaver. de Waſſerberg.

CHAPTER XI.

OF THE MILIARY ERUPTION*.

380. Thus have I gradually arrived at the miliary eruption, which is ſo nearly allied to the petechial one, that it was formerly ſuppoſed by many, that ſcarcely any difference exiſted between them. In fact, when the miliary puſtules break out firſt, they frequently ſeem like petechial ſpots, and are eaſily taken for them, unleſs they are examined with caution, until they riſe above the ſkin, by which circumſtance they are diſcriminated from the petechiæ, which are plain, and without a point. But this was not the caſe in a friend of mine, who was affected with the complaint. On the fourth or fifth day, an eruption took place on the breaſt and arms, conſiſting of a great number of red, plain, diſtinct, ſmall ſpots, very like petechiæ, which, however, towards the ſeventh day, began to riſe into truly miliary puſtules, and continued ſo during the whole courſe of the diſeaſe, which was not ſhort, nor unattended with danger, new ones riſing in ſucceſſion, and ſpreading over the whole body. Beſides, both diſeaſes are ſometimes conjoined in the ſame perſon, or one ſucceeds to the other: which is particularly mentioned by the writers on epidemic diſeaſes. Hence Petrus A Caſtro, although he properly diſtinguiſhed the *maculæ pulicares*, or *peticulares*, from the *papulæ culicares*,

or miliary ſpots, did not think that they differed ſo much in their nature as to require a different method of cure †.

* *Synon.* The *Hidroa* of the Greeks, the *Sudamina* of the Latins, the *Miarola* of the Piedmonteſe, and the *Migliarina*, or *la migliare*, among the other ſtates of Italy, in Germany the *Frieſel*, from the frequent ſhiverings, or, according to others, from a coarſe knotty cloth, the *Purpura* of Ludwig, *Inſtit. med. Clin.* p. 1. c. 1. ſubject viii. and of ſome others, particularly of the Germans. The *Morbus Miliaris* of Gerik, *Tract. de Febr. miliar.* c. i. an. 1711. The *Miliarium morbus* of Allioni, *Tract. de miliar. orig. progreſs. nat. et curat.* c. 2. § 68. ed. an. 1758 The *Miliaria* of Collin, *Diſſert. de Miliar.* † *De Febr. Punctic.*

381. This diſeaſe derives its name from the ſpots or puſtules which break out on the ſkin, and more or leſs exhibit the appearance and ſhape of millet-ſeeds, generally of various colours; as we ſhall hereafter ſhew at greater length. That they were known to the moſt ancient phyſicians, and particularly to Hippocrates *, Aetius †, and ſeveral others who followed them ‡, has been demonſtrated with a great diſplay of learning and ſound judgement, firſt by our countryman Fantonus ‖, and afterwards by Allioni §, both of them diſtinguiſhed medical profeſſors at Turin, and, laſtly, by not a few beſides ¶.

* *Epid.* l. 2. ſect. 3. and l. 7. ſect. 2. likewiſe *Coac. Prænot.* ſect. 1. & 2. Puſtules, as if they had been occaſioned by the bites of gnats, are particularly noticed in the caſes of Fullo, Pherecy-

des, and that of the ſon Ephrano, (l. 7. *Epid.*) ; but a very remarkable paſſage occurs in the third ſection of the ſecond book, which I ſhall tranſcribe here intirely, that every impartial perſon may ſee that the miliary eruption was not overlooked by Hippocrates, or the author of that book, whoever he was. The words are : " About the ſeventh, eighth, and ninth day *(of a particular epidemic fever)*, rough ſpots aroſe, of the ſize of millet-ſeeds, like the bites cauſed by gnats, but which were not very itchy, and continued till the criſis took place. But they did not break out in any of the male patients. None of the women, in whom the eruption broke out, died : but they became dull of hearing, and lethargic, although ſuch as were attacked with theſe ſymptoms were not very drowſy before." Fantonus *(De Antiq. et Progres. Febr. miliar.* p. 74.) with good reaſon ſuppoſes, that this paſſage was not ſufficiently attentively conſidered by Vales in his commentary. For he conſidered thoſe miliary roughneſſes, reſembling the bites of gnats, as being the ſpots which the Spaniards name *Tabardillo*, or petechiæ, which at that time were common in Spain, and well known. But Martianus, *(Comm. in Epid.* 2. ſect. 2. v. 20.), who by no means looked upon theſe miliary roughneſſes as being petechiæ, has interpreted the text better ; and aſſerted, that he had frequently found ſuch in patients affected with ardent fever. Nor am I diſpoſed to accede to the opinion of Gaſteller and others, who ſuppoſe that thoſe ſpots of Hippocrates were ſecondary, or ſymptomatic, differing widely from the primary and eſſential ones ſpoken of here. For they did not break out at the height, or cloſe, of the diſeaſe, when the fluids had become corrupted and vitiated, but during its progreſs, and remained until the diſeaſe was reſolved ; nor did they appear in any except female patients. Nor, becauſe all of theſe females recovered, are we at liberty to infer from it, that it was not the miliary diſeaſe, which frequently proves fatal ; for inſtances are recorded of the primary, or eſſential, miliary diſeaſe having been mild, and terminating favourably, in the ſame manner as happens in the mild ſmall-pox ; as will be ſhewn more clearly hereafter.

† *Tetrabibl.* 2. sect. 1. c. 129. ‡ Galen, *De Atra Bile*, c. iv. Avicen. l. iv. *Fen.* i. *Tract.* iv. c. 2. Montan. *Conf. med. cent.* 2. p. 598. Petr. Sal. Diversus, *De Febr. Pestil.* c. 18. River. *Prax. med.* l. xvii. sect. 3. c. i. obs. 21. Cent. 1. Diemerbroeck, *De Pest. Hist.* 22. and 100. Roboret, *De Febr. Petic.* p. 180. Petr. A Castro, *De Febr. Malig. Punctic.* § vii. Neucrantz, *De Purpura.* At Lubec, in the year 1648, in which city he observed this disease prevail epidemically in a malignant form for three or four years, before Welsch saw it at Leipsick. ‖ L. c. § *Tract. de miliar. Orig. Progr. Nat. et Curat.* c. xi. ¶ Molinar, Planchoni, Gasteller, &c. But in the year 1741, at Gottingen, a dissertation of Jo. C. Lud. Seip, entitled *De Purpura, antiquo morbi*, had appeared.

382. But although physicians from the earliest times discovered the miliary eruption in diseases which were generally acute and malignant, it is a matter of doubt whether they considered them as a primary and distinct complaint, or rather as an accidental, and secondary, or symptomatic one*, as the observations which are to be found in their works concerning this eruption can by no means be compared with the very perfect history of the complaint which we now have. For it must be confessed, that this complaint was first observed and described accurately, when it prevailed with great violence for three years, an. 1652, 1653, 1654, among puerperal women at Leipsic, as appears from its history published by Welsch in the year 1755 †. From that time, the attention of phy

ficians being called to it as a particular diſeaſe, they began to examine the patients more carefully, to remark its peculiar ſymptoms, and to reflect on its regular progreſs and reſolution; which became the more eaſily done, the more extenſively it diffuſed itſelf into other cities and countries. From a variety of obſervations, therefore, it appeared, that it was both a primary, eſſential, and diſtinct diſeaſe, different from all others, and not hoſtile to puerperal women only, but to other people alſo, of every age, temperament, and ſex. Its progreſs over the world, and at what periods it introduced itſelf into particular countries, has been moſt fully pointed out by the ingenious Allioni, who has amaſſed a great variety of authorities from all quarters, and may be conſulted by ſuch as are deſirous of more ample information concerning it ‡. Since his time, many works on the ſubject, replete with uſeful obſervations, have appeared in ſucceſſion, but ſometimes ſo various and repugnant to each other, as to occaſion no ſmall perplexity to the reader.

* There was formerly a great conteſt among phyſicians of no ſmall name, concerning the queſtion, Whether the miliary eruption be eſſential, or critical, or ſecondary, or ſymptomatic. I have already ſaid enough on the abuſe of theſe terms. Some, therefore, ſupported the former, and others the latter opinion, with all their power. Among the abettors of the firſt are the names of Tiſſot, Störck, Collin, and others,

who, truſting to their own experience, contend that the miliary eruption is always primary, never ſecondary, nor factitious. At the head of the other claſs ſtands De Haën, who, however, is not always conſiſtent with himſelf. I do not take upon me to determine their controverſy. It only appears to me probable, that the eruption may ſometimes, though rarely, be ſecondary, when the fluids are ſo vitiated by the primary diſeaſe, that ſome part of them is carried to the ſurface, and produces the miliary eruption there. But I have elſewhere conſidered it as probable that this may happen in many diſeaſes, particularly putrid ones, as in the acute gaſtric fever, in both ſpecies of the malignant ſlow nervous fever, &c. And I ſtill am diſpoſed to ſupport this opinion. But when the eruption is ſecondary, it appears to me to be at one time critical, at another time ſymptomatic. Examples of both kinds frequently occur in practice, and not a few of them have been publiſhed by their obſervers. In confirmation of the fact, I ſhall adduce a few examples here. Boucher, in the month of July of the year 1781 (*Journal. de Méd. Sept.* 178:, p. 272.), obſerved a *putrid*, or rather *bilious continued fever*, as he himſelf calls it, which attacked many at the ſame time. It was aggravated every third day. It, therefore, ſeems to have been a *ſimple bilious*, or *gaſtric tritæophya*. In ſome labouring under this fever, a ſlight miliary eruption took place, though not in all, which added nothing *eſſential*, as the author ſays, to the diſeaſe; nor did it at all change the proper method of cure in common to the reſt. For the cure in all the patients conſiſted in employing gentle bleeding, emetics, and cathartics. Every body ſurely muſt name this complaint *ſecondary*. In the year 780 and 1781, at Florence, during the winter an epidemic peripneumony prevailed, in which the miliary eruption at length ſupervened, and occaſioned a favourable criſis; Targion. *Opuſc. Med. Prat.* vol. v. *Conſt. Epid. di Firenze nell' Invern.* 1780, 1781, c. v. § 419. p. 369. Of which Targioni ſpeaking, obſerves, "This is probably a caſe (*he means an inflammatory congeſtion in the lungs, ariſing from blood effuſed into the cellular mem-*

brane), in which, in conſequence of ſome new infection being communicated to the blood *(namely, by the abſorption of the putrid blood)*, another courſe of fever is excited, which does not yield except to the appearance of the miliary eruption." Whether or not is the conjecture rendered probable by the practical obſervation, that every thing which promotes the putrefaction of the fluids has a particular effect in inducing the miliary puſtules? Whether or not is the probability increaſed by ſuch a criſis having been more frequently obſerved to take place in the ſecond ſtage of the epidemy, when the bile exerciſed more force? The following alſo ſeems to have been a ſecondary, and at the ſame time critical miliary eruption: "A peaſant of about twenty years of age, after being heated with labour, fell aſleep upon the green graſs in a damp ſituation, in conſequence of which he was attacked with opiſthotonus. His jaws were cloſed, but not ſo firmly as to prevent inſerting meat and drink into the mouth. Blood was repeatedly drawn, oily and anodyne emulſions and paregorics, cathartic injections and emollients, occaſionally alſo accompanied with the addition of opium, caſtor, and muſk, were given; externally were applied, ointments of oleum nervinum, and next, alſo, of mercurial ointment, the hot-bath, &c. but without any advantage. The pulſe was always ſomewhat febrile. At length a white miliary eruption appeared on the ſkin, and then the patient began to get better, and recovered perfectly, after an illneſs of two months;" Dall' Armi, *Sagg. di Med.* P. ii. obſ. viii. p. 95. But let this ſuffice concerning the ſecondary miliary eruption, whether critical or ſymptomatic. For I do not deſign to treat in this place of any but the primary complaint.

† Godofred Welſchii, *Hiſt. Med. Nov. Puerp. Morb. Contin. Diſput. die* 20*mo April* 1655. ‡ L. c. c. 1.

383. But it is particularly to be remarked, that not a few, after having only ſeen ſome very ſevere epidemy, attended with extremely dangerous ſymptoms, and frequently proving fatal,

have immediately been impreſſed with the idea of the miliary eruption being a malignant, formidable, and almoſt fatal diſeaſe, diſcarding from this complaint the other caſes in which the eruption appears either without fever, or with but a ſlight one, or unaccompanied with alarming ſymptoms, and which go through their ſtages calmly. Nor are they agreed, whether the eruption or fever conſtitutes the primary complaint. But moſt people, conſidering the miliary eruption as an effect, or acceſſory ſymptom, have turned their attention only to a fever of a particular nature and bad diſpoſition. Others have ſuppoſed that this kind of fever is peculiar to puerperal women only, from having found it frequently occurring in them, and not common to others. Some, on the other hand, have looked upon the miliary eruption, or miliary fever of puerperal women, as they call it, as very different from that which prevails epidemically. It has even been alleged, that this eruption is not to be aſcribed to the diſeaſe, but to the regimen and heating remedies employed; and that, therefore, as being factitious, and proceeding from external cauſes, it may be avoided before appearing, or, when preſent, completely neglected, without any bad conſequence following it. Nay, ſome have aſſerted that this diſeaſe prevails in certain countries and places only, and not in others, in conſequence of which many either

never examined the ſkin of their patients, or only very ſuperficially; not at all concerned about the miliary puſtules as being unuſual in their country; or, if they ever met with the miliary eruption, conſidered it as of no importance, or only as an accidental efflorescence *. There is no wonder, then, that ſuch a difference of opinion concerning the method of treatment in this diſeaſe, has prevailed, as to leave one in doubt to which he ought to attach himſelf.

* Hence perhaps it happened, that the miliary diſeaſe was later of beginning to be known in certain countries. Add to this, that the ſpots are ſometimes ſo ſmall, and alter the colour of the ſkin ſo little, remaining tranſparent, that if they are not viewed tranſverſely, and between the eye and the light, they cannot be diſcovered. They are very apt, therefore, to eſcape ſuperficial examination. I remember once to have gone to a town in which the miliary eruption was ſaid to be unknown, and never to have been ſeen. While I remained there I fell in with ſome patients, in whom, from the uſual ſymptoms, I predicted the appearance of the miliary eruption, which, in fact, in a ſhort time took place. From that time both the ſporadic and epidemic miliary eruption were taken notice of by careful obſervers, occurring both in women and in men. Gaſteller alſo, and Planchon, the laſt writers among the French on the miliary eruption, ſeem to aſcribe the late appearance of the complaint elſewhere to the ſame cauſe.

384. In treating of a ſubject involved in ſuch difficulty, I do not flatter myſelf with the hopes either of reſcuing it from its preſent obſcurity, or of throwing much new light upon it. But, guided by the long practice I have had, and the

light of reaſon, and calling to my aid the aſſiſtance which the lateſt authors afford me, I truſt I ſhall conduct myſelf in ſuch a manner as to evince an uniform attachment to the love of truth alone in the courſe of my inveſtigation. I ſhall, therefore, firſt mention, whether the miliary eruption, like the other exanthemata (380.) of which I have ſpoken, occurs ſometimes without fever; next, whether it takes place with fever, and of how many kinds it is. With regard to the firſt, no perſon has explained the matter more clearly than Fantonus, who obſerves, "I conſider that the miliary eruption, which occaſionally occurs without fever, is common to almoſt all nations. Of this kind is that which Hippocrates, and other Greek writers, have named Hidroa, and the Latins Sudamina *, or ſweat puſtules †." And the ſame learned author ſubjoins, that two ſpecies of ſudamina are eſtabliſhed by Actuarius and Serapion, the one of a *red colour*, the other much leſs ſo, or phlegmatic, which would be now called *white*, and that from a *certain degree of heat* it is generally named *ſufferſuras*, as Fracaſtor tells us, and by the Sicilians *bruxoli*, or *bruſoli*; but by the Neapolitans, as we learn from Ingraſſias, *migliarino*, *from being very like millet-ſeeds*. And he adds, "The miliary puſtules are properly named, on the whole, and are afterwards divided into red and white." Certainly Bontius ſeems to ſpeak of the red ones as

occurring frequently among the Indians, "which, without being accompanied with any fever, occaſion roughneſs and very uneaſy itching of the ſkin." And he affirms, "that perſons newly arrived in India are affected with moſt ſeverity ‡." I cannot omit the reſt of Fantonus's words, as making very much for my purpoſe. He proceeds ‖, "Fabius Paulinus, and ſeveral other followers of Galen, think that the *hidroa*, or puſtules of which we are here ſpeaking, ariſe from the exudation of bilious and very acrid ſweat: Fernelius, however, ſuppoſes that they proceed from a portion of that fluid being retained under the epidermis, and not being capable of eſcaping through the perſpiratory pores. But the miliary puſtules break out frequently both during ſweating, and ſometimes alſo in a dry habit of body. For although the conſtant flow of the cutaneous perſpiration, like brine, is a ſtimulus calculated for exciting them, yet ſuch an eruption is eaſily excited, merely by heat, and an appulſe of acrid blood to the ſurface, eſpecially when ſome external cauſe is ſuperadded. When, therefore, it is a warm country, or the ſummer-time, they moſt commonly break out in the arms, breaſt, back, and other parts of children and young people." Which every perſon knows happens, not only in children and young people, but likewiſe in ſuch as have attained their full growth.

* I foreſee that not a few will object to my employing the *hidroa* and *ſudamina* of the ancients, as ſynonymous with the mi-

liary puſtules. For they think, that by theſe terms the ancients underſtood a diſeaſe quite different from the miliary eruption; ſo that thoſe who deny that the miliary puſtules, when they break out in their patients, are really ſo, immediately allege that they are the *ſudamina*, or *hidroa*. But they only change names, and not the diſeaſe. Let us now liſten to Foreſt on the ſubject. The ſixtieth obſervation of his ſeventh book is entitled, *De Puerpera Papulas Rubentes Habente*. In this woman, in the year 1556, on the fourteenth day after delivery, miliary puſtules ſupervened, which, on being forced in by cold, were ſucceeded by great oppreſſion and ſtraitening of the præcordia, attended with a very weak pulſe. But in the ſcholium on the caſe he concludes, that theſe ſpots were the *ſudamina*, or *hidroa*, and, after recommending a diaphoretic regimen, that the ſomes of the diſeaſe might be called to the ſurface, he concludes thus: "All *hidroa* and *ſudamina* are not ſo dangerous; we muſt, therefore, obſerve whether they are attended with any malignity, for thoſe which take place without fever occaſion no inconvenience; in the mean time, however, we muſt not deſpiſe theſe puſtules. For in whatever manner they are repelled, by checking the motion of nature, they are apt to prove injurious, and occaſion the moſt ſevere ſymptoms, as the following example demonſtrates:" namely, the ſixty-firſt obſervation, which is inſcribed *De Muliere Sudamina habente, et a medicaſtris male tractata, unde tandem mors ſubſecuta eſt.* In the ſcholium on this laſt hiſtory he remarks, that not only hidroa and ſudamina of a red colour exiſt, likewiſe another ſpecies, namely, the *white* or *cryſtalline*, ſuch as Fernelius has deſcribed under this name in the following words: "They are ſmall, watery puſtules, which ſuddenly break out here and there over the ſurface of the body, but more frequently on the hands and feet, of the ſize of millet-ſeeds, full of water, without any redneſs or pain." From theſe words, if I miſtake not, it appears evident that the *hidroa* of the ancients anſwers intirely to the miliary eruption of the moderns, and that two kinds of it were known, long before Welſch wrote upon the diſeaſe which proved fatal to puerpe-

ral women in Leipſick; namely, one *benign*, the other *malignant*, and both of them diſtinguiſhed by the colour of the puſtules into *red* and *white*, as the miliary eruption commonly is. Which I ſhould wiſh to be particularly attended to, that we may not be miſled by the authority of De Haën and his followers, and conclude that the *hidroa* differ from the truly miliary puſtules.

† L. c. p. 66. 67. ‡ *Med. Ind.* l. iv. c. 18. ‖ Fant. l. c.

385. Beſides the authors already mentioned, Hoffman makes mention of the red miliary eruption accompanied with fever *. Gerik was of opinion, that it ought to be called the miliary diſeaſe, not the miliary fever, becauſe this eruption is ſometimes obſerved unaccompanied with fever †. Ludwig preferred giving it the name of *purpura*, to fever, becauſe it is ſometimes unaccompanied with it ‡. Juncker alſo affirms, that ſome are affected with this complaint without fever, ſo as to be able to go about their uſual occupations, and to feel no inconvenience except an itching under the ſkin ‖. Nor does Vogel § altogether differ in opinion from him, although he is afterwards at pains in ſome meaſure to correct what he has advanced. Their opinion is confirmed by a practical obſervation of Damilani, who obſerves: "I have ſeen miliary puſtules ariſe on the ſkin in great numbers, raiſed, diſtinct, and cryſtalline, accompanied with very fetid ſweat, in a countrywoman of my own, who is ſtill living, without her having the ſmalleſt ſymptom of fever. The ſweat was univerſal, and her

pulſe was very ſoft, full, but very ſlow ¶." And Deliſle makes a ſimilar remark **. Collin alſo ſaw the miliary eruption, both red and white, in two patients, without being accompanied with fever ††; and although he allows that theſe inſtances are of rare occurrence at Vienna, he affirms that they are ſometimes found there, attended with a pulſe which is ſcarcely febrile, with ſome degree of laſſitude, but without any great derangemnt of the functions ‡‡. And, if I may be allowed to ſubjoin my teſtimony, I have more than once had an opportunity of ſeeing the miliary puſtules even in puerperal women, both of a reddiſh-white, and cryſtalline colour, unattended with fever. Theſe are named by ſome, *ſpurious*, and *fatuæ* ‖‖. They may name them ſo if they pleaſe, provided by that name the miliary eruption is underſtood. But that no one may deny that that eruption is truly miliary, let him remember, that although it is not accompanied with actual fever, ſome uneaſy illneſs, reſtleſſneſs, and anxiety, precedes the eruption, after which the puſtules riſe on the ſurface of the ſkin, having the figure of the miliary eruption, more or leſs itchy, that they gradually increaſe, ſometimes become ripe; and that from being red, or diaphanous, as if pus were formed, they become white, break, dry, and terminate in mealy ſcales, the ſcarf-ſkin drying, and falling off in cruſts. But if they are raſhly

or accidentally forced in, anxiety, pains, delirium, convulsions, and other worse symptoms, together with fever, arise; and if these symptoms are not acknowledged to be peculiar to the miliary eruption, I know not what other symptoms can. The first distinction, therefore, of this eruption, in my opinion, should be, the *morbus miliaris apyreticus*, or that unaccompanied with fever. Sometimes this species returns frequently, particularly at certain times of the year, and sometimes also it is long protracted, and becomes almost habitual; and hence in Germany, where this happens more frequently, it is called *purpura chronica*, frequently occurring in scorbutic people, and those affected with any other inveterate taint of the blood. The Germans thought proper to name it *purpura*, from the red colour of the spots, although that name is also found to be given by them to the white, or crystalline pustules, the epithet denoting their whiteness being added. I know a gentleman, who is affected with arthritic affections for the greater part of the year, in whom this species of miliary eruption occasionally supervenes, and goes through its stages regularly, terminating in a few days, without any severe febrile accompaniment.

* *Med. Rat. Syst.* T. 2. sect. 1. c. 9. p. 86. † *Tract. de Febr. miliar.* ‡ L. c. § 211. || *Tabul.* lxxv. N. iii. § *Prælect. Acad.* § 142. ¶ *Nuov. Trat. Pratic. &c.*

Mondovi, 1774. ** *Dissert. sur la Fievr. Miliair. des. Femm. en couche*, p. 17. and 18. †† *De Miliar. des Femm. en couche*, p. 7. & 18. ‡‡ *De Miliar. rectaque Med. Rat.* p. 31. ||| L. c. p. 67. ¶¶ Damilani, l. c. p. 41.

386. Generally, however, as I have elsewhere shewn (384.), the miliary disease is conjoined with fever. Hence it has happened, that most writers have given it the name of *miliary fever* *. I shall call it, however, the *morbus miliaris pyreticus*, or the febrile miliary disease; and this will be another distinction derived from the nature of the complaint. But the nature of the fever, which precedes and accompanies it, is so variable, that it cannot be referred to any known or fixed genus, in the same manner as the fever accompanying the petechiæ, or other eruptions, of which I have already treated at sufficient length. For at one time it assumes the appearance of a quotidian remittent, at another time that of a simple tritæophya, sometimes of an intermitting tertian, at other times of a catarrhal, or rheumatic amphimerina, sometimes of a malignant slow nervous fever, sometimes of an inflammatory and ardent one; as will appear better from the description of it, which I am about to deliver.

* *Synonyms.* The *Febris Culicaris* of Petr. A Castro, *De Febr. Punctic.* sect 1. aph. vii. The *Febris Miliaris*, or *Vesicularis*, of Hamilton, *Tract. de Febr. Miliar.* c. 1. The *Febris Purpurea*, or *Miliaris*, of Juncker, tab. lxx. The *Purpura cum Febre* of Ludwig, *Inst. med. Clin.* § 211. The *Purpura Miliaris* of Salz-

man, *Hiſt. Purp. Mil. Argentorat. et viciniam infeſtant.* Argentorati, 1766. The *Miliaris* of Sauvages, *Noſol.* cl. 3 ord. 1. gen. v.; of Sagar, cl. x. ord. 2. G. 7.; of Franc. Beretta, *Diſſert. de Miliar. nat. different. et curatione*, 1778.

387. Nor do the miliary puſtules vary leſs in ſize and colour than in numbers. They are generally like millet-ſeeds, raiſed, hardiſh, and reſiſting the touch, ſo as to be eaſily and diſtinctly felt *. Sometimes, though rarely, they are larger. In a ſanguine young man, of robuſt habit, I have obſerved them not unlike the diſtinct ſmall-pox, in ſize, redneſs, and colour. They frequently appear leſs; nay, are ſometimes ſo ſmall, as to be no larger than pin-points, and are ſcarcely diſcernible, unleſs viewed oppoſite to the light, or tranſverſely. But they always render the ſkin more or leſs rough, and are diſcovered only by a nice touch. In ſome they immediately appear red; in others they do not change the colour of the ſkin, being not unlike ſmall veſicles full of a limpid fluid. Theſe are commonly and properly called *white*, or rather *cryſtalline*. Sometimes they are red only about the baſes, and on the top ſhew a ſmall pellucid veſicle, or one filled with a milky fluid, and thus are of a variable and inconſtant colour, eſpecially thoſe which are called *white* †. Sometimes they are found both red and cryſtalline, and of a pellucid red, and ſufficiently manifeſt and diſtinct in the ſame patient. Theſe, with Vogel and others, I name *mixed* ‡. But accor-

ding as they increaſe in ſize they frequently change their colour. Thoſe which were red not unfrequently, on ripening, paſs into white, milky, or purulent ones; and thoſe which were cryſtalline, and contained a pellucid lymph, become opaque, milky, or even ſlightly red around; and all of them at length dry and fall off in ſcales. But they differ in quantity, in ſome caſes appearing numerous and crowded, in others few and ſparſe. Sometimes alſo, whether they are red or white, they run together ‖. Sometimes ſuch as run together form veſicles here and there, of the ſize of a pea, with a red circle §. Generally theſe variations of the colour and ſhape ſeem to depend upon the patient's temperament, habit of body, age, and other circumſtances ¶. For ſanguine, young, and plethoric people, are covered with red puſtules; phlegmatic, weak perſons, of a moiſt habit of body, as children and women, or ſuch have been exhauſted in conſequence of great evacuations, particularly of blood, are covered with cryſtalline and white ones **. Among thoſe which do not change the colour of the ſkin, muſt be noticed that variety which reſembes a gooſe's ſkin, ſeen and deſcribed by Mezerey †† and Barailon ‡‡. It breaks out in particular about the neck and hypochondres; and although the ſkin retains its colour, yet it is here and there interſperſed with ſome redneſs. Barailon and Deliſle enumerate other diſtinctions of the puſtules; but becauſe

they either belong as varieties to thoſe already mentioned, or ſeem referable to the petechiæ and other eruptions, I judge it proper to paſs them over in ſilence. The diſtinction of them, therefore, into *red* and *white*, under which every deſcription of miliary eruption is commonly comprehended, appears to be frivolous; or, if it is not ſo, doubtleſs it is not ſufficiently applicable to every ſpecies and variety of the diſeaſe. And I can ſtill leſs accede to the opinion of thoſe who ſuppoſe, that the white and cryſtalline puſtules are always accompanied with malignity, but that the red ones are of a benign diſpoſition. For that both kinds may be benign or malignant, is confirmed by the experience of practitioners; and ſome even have generally found the red ones of a worſe kind than the white ‖‖. Ludwig, therefore, with good reaſon remarks, that "either the benign or malignant nature of the diſeaſe appears rather from the cauſes and ſymptoms, than from the difference of the puſtules §§."

* Ludwig, l. c. § 214. † *Id. ib.* ‡ *Acad. Prælect.* § 136. ‖ *Id. Acad. Prælect.* § 137. Geolike, *Diſſ. de Purp. alb. Conſl. Francof. ad Viad.* 1740. Störck, who ſaw the red confluent miliary eruption; *Ann. Med.* 1. p. 66. § Vogel, l. c. ¶ Ludwig, *ibid.*

** Damilani remarks, that a lingering eruption is whiter than uſual. But this appears to proceed from the repeated bleedings which are generally employed during the whole courſe of the diſeaſe, while the eruption is going ſlowly on.

†† *Method. Aiſée*, &c. p. 7. ‡‡ *Hiſt. de la Soc. Roy. de*

Méd. T. 1. p. 193. Paris, 1779. ||| *Conſt. Epid.* 1700. Vratiſlav. p. 334. Juncker, Tab. lxxv. *in Progn.* n. 12. Gaſteller, *Eſſay ſur la Fievr. Miliar.* p. 99. & 358. Allioni, l. c. c. 3. p. 35. Matth. Collin, *Diſſ. de Febr. Mil.* p. 27. §§ L. c. § 214.

388. The appearance of the febrile miliary diſeaſe is ſo variable, that thoſe authors who have delivered the deſcription of it have been obliged to divide it into certain heads. Hamilton has conſtituted two of them, namely, the *ſimple* and *complex*; and he does not conſider any other as the miliary eruption, excepting that which produces the white ſpots. For he called the red eruption, not *miliary*, but *papillary*, and ſeparated from it the miliary or veſicular fever, which he names ſo if the puſtules be ſolitary. But if they are conjoined with the white ones, he then eſtabliſhes the *compound* or *complex* ſpecies of the complaint. By which diviſion he ſeems to reject the common and old diſtinction of the eruption into *red* and *white*; though both frequently occur diſtinct in the miliary diſeaſe, and may be both benign, malignant, and dangerous, as the experience of many phyſicians has demonſtrated, and all the latitude of the diſeaſe is not comprehended by it, contrary to what he ſuppoſed. Add to this, that ſome ſubdivide them into *white* and *pellucid*; but it is to be obſerved, as Gmelin remarks*, that the *pellucid* ſpots are apt, by growing ripe, to become *white* and *opaque*, and that

the red ones gradually diſcover a pellucid veſicle upon their top, and ſometimes alſo become almoſt completely *pellucid*, or *white*. Gerik has divided the miliary diſeaſe into *idiopathic*, eſſential, or primary, *ſymptomatic*, or ſecondary, and into *complex*, or that which is combined with another diſeaſe. But neither can this diviſion properly comprehend all the diſtinctions of the diſeaſe, as will appear hereafter. Moreover, the ſymptomatic kind, although it is not intirely excluded by us, appears ſo rare or uncertain, that by many it is not admitted at all, particularly Collin †, Tiſſot ‡, Beretta ‖, and others. Laſtly, Allioni, who did not approve of the diviſions of others, choſe to diſtinguiſh it into *moſt ſimple*, *ſimple*, and *complicated*, or *complex*; granting, however, that the limits of each cannot be eaſily determined, on account of the one readily paſſing into the other, and the frequent combination with other complaints, together with many other concurring cauſes §. But others have eſtabliſhed various other diſtinctions, derived from the mildneſs or malignity of the diſeaſe, from its manifeſt or diſguiſed appearance, or from its ſimplicity, or combination with other complaints. For although it is the very ſame diſeaſe, according to the variety of the quantity or badneſs of its fomes, or the diſpoſition of the body; according to the patient's temperament, habit, age, and ſex, the time of the year, the country, and the prevailing

epidemic, or ſtationary diſeaſe, and its being combined with others; and according to the diverſity of the prediſpoſing cauſes, it is ſo altered, aſſumes ſuch new and unuſual ſymptoms, raging ſometimes with more, ſometimes with leſs violence, that it ſeems to differ very widely, and therefore appears at one time as a benign complaint, at another as a malignant one, ſometimes regular, ſometimes anomalous, ſometimes ſecret and diſguiſed, at other times complicated ¶, or pure, and ſo forth.

* § 11. † L. c. ‡ *Lettre a* Mr Hirtzel. ‖ *Diſſ. de Miliar. Nat. Differ. et Cur.* § L. c. 3.

¶ No one ſurely can deny that the miliary diſeaſe is combined with other complaints; for it is a certain fact, that ſporadic diſeaſes (as I have more than once mentioned, and think it neceſſary to repeat here) always borrow, or aſſume, ſomething from the prevailing epidemic, or ſtationary diſeaſe; and, likewiſe, that epidemic and ſtationary diſeaſes vary ſomewhat according to the time of the year, and changes of the weather. Hence, when the miliary eruption prevails, it is frequently combined with gaſtric, catarrhal, ſlow nervous, inflammatory, intermitting fevers, and other intercurrent diſeaſes; and is then named *complicated*. But, according to the ſeaſon of the year, and viciſſitudes of the weather, it is very apt to aſſume gaſtric, catarrhal, bilious, and inflammatory ſymptoms, &c. Hence ariſe very minute diſtinctions and anomalies, which it is the buſineſs of the phyſician to diſtinguiſh properly.

389. It is neceſſary, therefore, to give its general deſcription, that its particular may appear the better. And ſince in it, as in the other ex-

anthemata, three diſtinct ſtages are particulariſed, namely, the *apparatus*, *eruption*, and *exſiccation*, we muſt conſider them in their proper order. But if any perſon thinks it neceſſary to add a *fourth ſtage*, namely, that of the *ſuppuration*, or *maturation*, which holds an intermediate rank between the *eruption* and *exſiccation*, as in ſmall-pox generally takes place, in doing ſo he will by no means deviate from nature, nor ſhew too great refinement. But the diſeaſe commences either all at once, and with ſcarcely any preceding ſymptom of bad health, or with ſome previous indication of approaching illneſs. When it comes on in the ſecond manner, it is preceded for ſome days by laſſitude, pains, and an unuſual ſenſation as if the limbs were broken, exceſſive heat, watching, or diſturbed ſleep, or, on the contrary, a great propenſity to ſleep, heavineſs, or pain of the head, ſome oppreſſion at the cheſt, ſometimes diminiſhed appetite, and frequently a great tendency to ſweating *.

* Damilani, l. c. p. 14.

390. After two, three, or four days being ſpent in this doubtful ſtate of health, the fever commences, generally beginning with cold and ſhivering, or at leaſt with chillineſs of the feet and hands. The cold, or ſhivering, is followed by heat, of various degrees, generally ardent and acrid, ſometimes mild, according to the temperament, habit, age, and the country where the

diſeaſe prevails, together with the ſeaſon of the year, the degree of plethora preſent, and the bad condition of the fluids, the diatheſis of the blood, and other circumſtances. The fever itſelf generally varies very much, as I have already remarked (386.), which almoſt all writers take notice of. In general, however, it is not very great, as far as the pulſe indicates; nor does it oppreſs the patient much. Frequently after twenty or thirty hours, a ſweat coming on, it remits, and puts on the appearance of an ephemera, but is very apt to deceive the incautious with falſe hopes; for in a ſhort time after, particularly in the afternoon and evening, it returns, accompanied with ſlight or great ſhivering, or more intenſe heat, and the ſweat becomes almoſt perpetual, more copious, however, during the remiſſions, at firſt inodorous, afterwards fetid, having a peculiar, and, as it were, corrupted acid ſmell. For it ſeldom happens that ſuch a ſweat is not preſent. But the acceſſions and remiſſions are repeated in ſuch a manner as to reſemble the type, ſometimes of a ſimple, at other times of a double, continued quotidian or tertian; nay, ſometimes the remiſſions attain, or ſeem to arrive at a complete apyrexia, being at the ſame time accompanied with ſaffron-coloured, thick, or lateritious urine, increaſing the ſuſpicion of the preſence of intermitting fever, or that of the *febris periodica extenſa*, or *ſubintrans*: but it ſhort-

ly is changed into a thin, citron-coloured, or colourleſs, and copious fluid. In which caſe the phyſician has recourſe to the peruvian bark in vain. In moſt inſtances, ſhiverings, or cold and heat, alternate with each other, eſpecially whenever the patient moves himſelf, or uncovers any part of the body. But it happens in ſome ſo irregularly and frequently, that Barald has ſometimes obſerved them return twelve times in a day *. But the ſkin becomes ſo ſenſible, that it receives a ſhock every time it is expoſed to the contact of the ſurrounding air. Hence the patients carefully cover themſelves all over, to prevent their being affected with ſhivering and cold. In other caſes, ſhivering or cold is not preſent, but a kind of heat or vapour, aſcending from the inferior to the ſuperior parts of the body, in which caſe the face occaſionally becomes fluſhed, ſo that the patients eagerly deſire the admiſſion of the cool air. Unſkilful phyſicians raſhly conſider theſe, and ſimilar changes, as hyſterical or hypochondriacal affections. But their blunder is eaſily detected by the continuance of the fever, by the fetid and acid ſmelling ſweats, and the like †.

* *Storia d' una conſtit. endemico-epidemic. di febbri migliari.* Modena, 1781, p. 18. † Damilani, l. c. p. 23.

391. Sometimes the fever, which appears very mild, and affects the pulſe little, is of a crafty

and deceptious nature; for it continues ſo until the eruption takes place, when it throws aſide its aſſumed benignity, and dangerous ſymptoms ariſing, it betrays ſeverity, danger, and malignity. But ſometimes the patient has a preſentiment of the danger and change which is about to take place; for while others remain perfectly eaſy, from the mildneſs of the appearance of the diſeaſe, he alone is anxious and fearful of the worſt, probably in conſequence of the miliary fomes having at length affected, and ſecretly deranged, the ſenſorium commune, and the origin of the nerves. Thoſe patients in whoſe *primæ viæ* there is a putrid or bilious colluvies, betray the manifeſt marks of it; for they are ſick, vomit frequently, and their tongue, at the beginning, is either white, and covered with mucus, or yellow, and foul; they ſometimes throw up a bitter, bilious, or viſcid, corrupted or acid matter, vitiated in various ways. Not unfrequently they are attacked with a looſeneſs of the ſame kind, nay, ſometimes accompanied with griping, and dyſentery. Then, I ſuppoſe, what Barald obſerved as an almoſt uniform ſymptom in his patients *, takes place, I mean their averſion to every kind of drink, until the greateſt part of the indigeſtible matter has been diſpelled. It may be obſerved, however, that ſometimes the vomiting, or hiccup, or both, independently of any dyſpeptic ſymptom, are

excited by whatever is taken into the ſtomach, or that a looſeneſs is produced, and tenſion, and a tympanitic ſwelling of the belly takes place. But it is highly probable, that it then depends principally on irritation of the nerves, or on the miliary fomes flowing to the ſtomach and inteſtines.

* L. c. p. 6.

392. I have already ſaid, that the heat varies, for ſome are not very warm, while others are parched both internally and externally. In ſome there is a headach, or at leaſt a heavineſs and dull ſenſation is felt in it; in others the head remains almoſt unaffected. Some are languid and debilitated to the laſt degree, and are apt to be frequently affected with ſlight fainting; others retain their ſtrength, and ſeem as in good health. Almoſt all of them are diſtreſſed with oppreſſion of the cheſt, accompanied with a ſenſe of conſtriction, or weight, as it were, in the ſternum, particularly in the left ſide of the thorax; whence it happens, that they are forced to heave deep ſighs, and to breathe irregularly. But theſe ſymptoms are generally more ſevere and manifeſt than in the petechiæ and other eruptive complaints. Moreover, during the paroxyſms, the oppreſſion, anxiety, pains of the joints, and ſpaſms, are aggravated. When the patients compoſe themſelves to reſt, and, with their eyes ſhut, ſleep is ſtealing on them, they all of a ſud-

den ſtart up in terror, or are ſeized with ſudden reſtleſſneſs, or their imagination is haunted with ſpectres; or the dyſpnœa, or cough, come on. The cough, however, is generally ſlight; though ſometimes ſo fierce, dry, and frequent, when the patient is not aſleep, that it amounts to a *convulſive* one, or *pertuſſis*, occaſioned by the acrid miliary miaſma irritating the larynx and lungs. Others are affected with an almoſt conſtant comatoſe ſleep, by which they are rendered, as it were, ſtupid, and, if they are advanced in life, like people in a ſtate of apoplexy. Both thoſe who remain awake at night, and ſuch as are affected with the comatoſe ſleep, generally ſpeak incoherently, and are troubled with alarming dreams. In moſt caſes, when the hands and tongue are thrown out, they are tremulous; and the fingers, legs, and feet, become affected with cramp, or a kind of numbneſs. In the mean time the pulſe is liable to very great changes; it is one time quicker, at another ſlower; ſometimes greater, and more raiſed; ſometimes leſs and depreſſed; but in all caſes it is particularly changeable, irregular, and ſometimes intermitting. But it is obſerved by Gaſteller to intermit regularly after nine, eleven, or ſixteen pulſations, and is ſaid to be ſo from the beginning †. In a great many it is ſmall, weak, or contracted, but reſiſts the feel, and is at times ſomewhat hard; on the other hand, it is great, ſtrong, ſometimes ſoft and lax, ſometimes hard and tenſe.

But in all, if attentively examined, it occaſionally manifeſts ſomething convulſive. Many are affected with intenſe thirſt, although the tongue looks well, and is moiſt; and this is ſaid to happen particularly in thoſe patients who are covered with the red puſtules. Others, although they be thirſty, receive injury from drinking, and therefore refuſe it; which is of moſt frequent occurrence when the ſtomach is oppreſſed with a bilious or putrid colluvies, as I have already obſerved. Sometimes there is no thirſt preſent, eſpecially in thoſe who are affected with the watery, lymphatic, or cryſtalline veſicles, as Barailon has obſerved ‡. The appetite is ſeldom gone; but if the patients indulge it too much, they occaſion worſe paroxyſms, and have reaſon to repent of their imprudence.

* Gaſteller, l. c. † L. c. p. 83. 84. ‡ *Mem. de la Soc. Roy. de Méd.* T. 1. p. 193. a Paris, 1779.

393. But as the eruption is about to appear, the fever becomes more violent, and all the ſymptoms are aggravated, ſo that generally the night preceding the eruption is more ſevere and troubleſome. For the anxiety, heat, oppreſſion at the cheſt, the alienation of mind, reſtleſſneſs, toſſing, ſpaſms, or comatoſe ſleep, increaſe, and the dejection and dread of diſſolution, if they were not preſent before, then manifeſt themſelves. Sometimes, alſo, convulſions, as in the ſmall-pox, come on, announcing the approach of the erup-

tion. During the ſweating, very frequently an uneaſy itching, and prickings, are felt all over the ſkin. In ſome patients, when the eruption is approaching, the belly becomes more or leſs ſwelled and tenſe *. Sometimes the fauces are painful and red, and the apex or ſides of the tongue are covered with ſmall puſtules, or aphthæ. The face at times becomes ſomewhat ſwelled and red; nor do the eyes remain free from the redneſs. For ſome of the miliary miaſma paſſes into them; nay, it is ſuppoſed by ſome to proceed alſo to the more internal parts of the ſyſtem.

* Barailon, l. c.

394. The period of the eruption is extremely uncertain; for it ſometimes appears at one time, ſometimes at another. It has ſometimes been ſeen to appear on the ſecond or third day, nay, even on the firſt; at other times not till the fourteenth, or ſixteenth *. In the epidemy which prevailed at Corregio in the year 1782, the ſpots did not appear till after the eleventh or fourteenth day, or when the eruption was of a difficult kind, or the diſeaſe had been neglected, on the twenty-firſt day †, and ſometimes even later. I myſelf have ſeen ſome patients in whom they were very long of appearing, namely, not until the twenty-ſeventh, or thirty-fourth day. And inſtances are recorded of the eruption having been protracted for five or ſix weeks ‡. Hamilton ſuppoſes that the period of the eruption ſhould

be conſidered as being about the fourteenth day, not from the time when the fever appeared, but from the time of the patient's firſt illneſs, which generally happens on the ſeventh day from the commencement of the fever ‖; in other caſes the eruption ſeems to happen between the eighth and twelfth day §. The moſt uſual period of the eruption is the third or fourth day, and more rarely the ſeventh, when the diſeaſe proceeds regularly; and it takes place firſt on the neck and breaſt, ſometimes on the arms, wriſts, and between the fingers: next on the back, belly, and reſt of the body, and very ſeldom on the face; ſometimes on the thighs and legs, or over the trunk of the body only ¶. Generally they break out on the upper parts of the body, and appear in ſucceſſion on the lower extremities; although they have been found ſometimes to appear in an inverted order. If a perfect ſeparation of the morbid matter takes place at once, it is generally completed within twenty-four hours, or leſs. But if it takes place imperfectly, and the whole fomes is not ſecreted at one eruption, on the former puſtules drying, the fever and the other ſymptoms ſuddenly return, and an eruption takes place, ſometimes in one, ſometimes in another part of the body; and this is repeated twice, thrice, or four times, and occaſionally oftener, nearly in the ſame manner, but always attended with fewer ſymptoms. It happens alſo, that ſome puſtules appear ſparſe-

ly, and come out with difficulty, and immediately diſappear, in conſequence of which the affections of the internal viſcera and nervous ſyſtem are increaſed, the force of the morbid matter being turned to the internal parts of the ſyſtem **.

* Barail. l. c. † Barald. l. c. p. 6. ‡ L. c. c. 2. p. 50.

‖ Damilani ſuppoſes that the ſkin at firſt is always denſer, and that its veſſels and pores are more contracted than towards the end of the diſeaſe. Hence he ſeems to derive the cauſe of the eruption taking place more ſlowly and favourably. But I do not know how true this may be in thoſe patients who at the very beginning, and for ſome days before the eruption takes place, are as it were bathed in their own ſweat. Whether in theſe patients are the ſkin and its pores in a ſtate of ſtricture or laxity?

§ Barail. l. c. ¶ Juncker, Tab. 75. § 3. Vogel, l. c. § 136. Allion. l. c. c. 4. § 74.

** In general the miliary eruption is retarded or imperfect of its own accord. Sometimes, however, it is retarded in conſequence of cold and dryneſs of the ſkin, the exceſſive uſe of refrigerants, frequently repeated purging, immoderate bleeding, &c.

395. The duration of the efflorescence, like the time of its appearance, varies according to the quantity and nature of the matter, as well as the patient's temperament, the ſeaſon of the year, and other circumſtances. In general the puſtules increaſe and ripen in the manner already ſhewn (387.), after which they burſt, dry, and laſtly terminate in ſcales, or fine powder like flour,

frequently attended with great itching. Sometimes the epidermis falls off in great cruſts. But the exſiccation generally takes place on the ſeventh, ninth, tenth, eleventh *, or the eighteenth day, namely, when the miliary fomes is preſent in great quantity, or on the twentieth, or twenty-firſt day, or ſomewhat, or even much, later †, according as the eruption itſelf has taken place ſooner or later. But after the eruption, if nature has forced all the matter to the ſurface, and the other fluids remain uncontaminated, not only does the fever quickly abate, the pulſe dilate and become ſoft, and the ſymptoms depart, but alſo, in conſequence of a bland ſweat being kept up, or copious and critical urine, or at leaſt copious, frequent, and not intirely watery urine being diſcharged, or in conſequence of both kinds of evacuations, the diſeaſe, together with the fever, gradually terminates, and all the functions of the body are reſtored to their former healthy condition. If the eruption, however, takes place imperfectly, and all the virus is not ſeparated, and has aſſimilated part of the blood to itſelf, whether that happens from the fault of nature, or the patient, or phyſician, or in conſequence of the thickneſs and reſiſtance of the ſkin, the fever is aggravated, the ſweats which flowed formerly are ſuppreſſed; the whole ſkin becomes dry; delirium, ſubſultus tendinum, difficult reſpiration, anxiety, and convulſions, ſupervene, or, if they are already pre-

ſent, are ſo much increaſed, that in general death ſpeedily follows. Similar conſequences take place if the eruption, which has already broke out, ſubſides, or ſtrikes in, in conſequence either of external heat, or the admiſſion of cold, or the erect poſture, or ſome paſſion of the mind, eſpecially rage, terror, melancholy news, or any other cauſe; unleſs ſome remarkable evacuation, as a copious ſweat, or looſeneſs, or the eruption's ſpeeedy re-appearance, brings aſſiſtance, and averts the danger. But the morbid fluid, when it is either not properly forced to the ſkin, or is made to retire by the above-mentioned cauſes, occaſions various ſymptoms, according to the diverſity of the viſcera to which it is transferred. When carried to the head it induces delirium, comatoſe affections, apoplexy, and convulſions; to the lungs, oppreſſion and fatal ſuffocation; to the chylopoietic viſcera, cardialgia, violent vomiting, hiccup, and colliquative diarrhœas, unleſs it is quickly recalled; to the cellular texture, it ſtagnates in its reticular veſſels and cells, ferments, as it were, with the other fluids, and, laſtly, becomes putrid. In all ſuch caſes the breaſts of puerperal women become flaccid, the ſecretion of milk ceaſes, the lochial diſcharge is ſtopped, and the tympanitic ſwelling of the belly comes on †. Sometimes all theſe ſymptoms happen, although a very copious, and almoſt confluent eruption, takes place, and the ſpots are very prominent, in-

ſomuch that their ſtriking in can never be apprehended. Then in particular the fever continues not only without any intermiſſion, but even increaſes in violence, attended with a great, ſtrong, and very frequent pulſe, a ſwelled face, ſhining eyes, and mental derangement, the forerunner of which is frequently ſudden melancholy, and ſudden fear without an evident cauſe, under the influence of which the patient repeatedly entreats extreme unction: and it is proper to gratify his deſire, for he generally dies delirious and convulſed within a few hours, as I myſelf, and others, have frequently obſerved. For ſuch is the quantity of the miliary matter, that the ſkin cannot receive it all, or its nature is ſo bad and malignant, that it aſſimilates almoſt all the fluids to itſelf, and according as the brain, lungs, heart, or other internal viſcera, are attacked, the animal and vital, or natural functions, or all together, are injured, or deſtroyed. It alſo ſometimes happens, that neither the fever nor ſymptoms are at all diminiſhed, but remain nearly in the ſame ſtate after the eruption, or are partly diminiſhed, partly aggravated, and thus the termination is doubtful, until nature in the ſtruggle either proves victorious, or is overcome. And this is the intermediate ſtate between each, to which I have already alluded.

* Vogel, l. c. Hamilton, l. c. † *Id. ib.* ‡ Chambon de Montaux, *Malad. des Femm.* vol. i. c. viii.

396. Such is the uſual appearance and pro-

greſs of the miliary fever. But many cauſes, both internal and external, and accidental combinations, occaſion no ſmall variation in it. For in ſome the belly is bound, in others it is looſe. Thoſe patients in whom it is looſe, frequently have watery, yellow, bloody, dyſenteric ſtools, and they ſometimes contain worms. Beſides the acid ſmelling ſweats, ſome alſo are troubled with acid eructations *. Sometimes, though rarely, moſt ſevere otalgia, very acute headach, phrenitis, convulſive aſthma, epileptic fits, and a copious ptyaliſm, oppreſs the patients †. But generally the ptyaliſm ſupervenes in thoſe patients in whom the tongue and fauces are ſeverely affected with aphthæ, as I have more than once had an opportunity of ſeeing. Sometimes hemorrhages, particularly from the noſe, ſupervene in this diſeaſe. Gaſteller and Barailon ſcarcely ever obſerved a hemorrhage from the noſe take place ‡, though others had frequently done ſo. Nor does the diſeaſe being endemic, or epidemic, occaſion a ſmall variation ‖; but in the ſporadic complaint, the peculiar nature of the patient, the time of year, and the ſtationary, or epidemic, diſeaſes which prevail, cauſe a ſimilar difference. For it is well known, that ſporadic, or intercurrent diſeaſes, always borrow ſomething from the ſtationary and epidemic ones, which cauſes ſome variation

in the complaint. Hence it is not ſurpriſing if, on account of the catarrhal, gaſtric, or inflammatory affections aſſociated with it, it has been judged that the miliary diſeaſe is a catarrhal, rheumatic, bilious, or inflammatory fever §. Likewiſe the time of the year occaſions ſome difference, ſo that, according to the ſeaſon, it aſſumes different ſymptoms, and frequently requires a different method of cure.

* Barailon, l. c. † *Id. ib.* ‡ It is ſaid to have been endemic at Turin, and almoſt over the whole of Piedmont, at Mantua, at Pavia, as alſo in Mons Arguus, in Picardy, and in general in damp and marſhy ſituations. Felix Aſtius, celebrated for many excellent medical works, and a writer of very extenſive experience, in *Annus medicus tertius Mantuanus*, p. 83. remarks, that the miliary diſeaſe, which was formerly almoſt epidemic and contagious at Mantua, is now of very rare occurrence there, and almoſt ſporadic. But it is ſo well known, that it frequently prevails epidemically, that no perſon in his ſenſes can deny it; for, were it neceſſary, I could produce a long liſt of epidemies, in which the miliary eruption, almoſt at all times, but particularly of late, has been obſerved and deſcribed. ‖ Barald, l. c. Damilani, l. c. § Hoffm. *Med. Rat. Syſt.* T. iv. ſect. i. c. 9. Barald, l. c. Agoſtini, *Oſſervaz. med. prat. intorn. alle febbri migliari popalarmente, &c.* Novara, 1755.

397. Moreover, the miliary diſeaſe is ſometimes propagated by contagion. I know very well that this is queſtioned by ſome, nay, that certain late writers altogether deny it, inſomuch that Sagar *, with ſome noſologiſts, has referred it to the exanthematic diſeaſes which are not communicated by contagion. But if due attention is paid to

the manner in which it aroſe at Liepſick and Turin, and was afterwards diffuſed by the arrival of infected ſtrangers in the other ſtates, as we learn from Welſch, Fantonus, and Allioni, it will appear that it is not leſs contagious than the ſmall-pox itſelf, eſpecially when the complaint is advanced, and ſpreads its poiſonous and putrid exhalations in all directions, and attacks a perſon prepared for the reception and retention of the virus. The miliary eruption obſerved at Corregio, in the year 1776, readily paſſed from the patient into the bodies of people in health, as we are told by Barald †, who beſides records two inſtances of the miliary diſeaſe being communicated by contagion, and combined with phthiſis pulmonalis, which are almoſt ſolitary ‡. Allioni does not heſitate to aſſert, that this diſeaſe was frequently communicated by the air. He ſays: "Accurate obſervation has ſhewn, that its contagious effluvia were carried to other parts, not merely by the air, but by perſons who had contracted the poiſon in the places where the diſeaſe prevailed ‖." But omitting the numerous teſtimonies of others, by which the contagious nature of this diſeaſe might be demonſtrated, I ſhall adduce three remarkable caſes, which, if I miſtake not, are ſufficient to put the matter beyond diſpute. The miliary eruption prevailed epidemically in the town of Fano. My friend Dallarmi,—a phyſician of diſtinguiſhed ſkill and

learning, whoſe death is ſtill lamented by the inhabitants of the town,—one day, when viſiting a friend of his own, who was affected with the complaint, obſerving the domeſtics wiping off the ſweat negligently, lent his aſſiſtance, regardleſs of imbibing the noxious halitus proceeding from all parts of the patient's body. But ſhortly after he felt himſelf ſo affected by it, that he declared to the byſtanders, that to a certainty he had caught the complaint by contagion. Afterwards, on returning home, he firſt felt himſelf grow ſlightly unwell, and next became really ill, and, being ſeized with the complaint in a moſt malignant form, loſt his life a few days after. Nearly in the ſame manner, Franc. Raffi, of Fayence, caught the contagion in the monaſtery of St. Benedictus in Mantua, from a patient, near whom he had continued too long ſitting, and that perſon, who had reſcued his patient from the jaws of death, could not himſelf eſcape, as I have learnt from his father and brothers, to whom all manner of credit is due. I lately ſaw another phyſician affected with the miliary diſeaſe, though of a mild kind, who, while in perfect health, had been attacked with it, in conſequence of too narrowly inſpecting the eruption on the breaſt of a woman to whom he had been called. An obſervation of Barald lately quoted is very much in point §. A young man, a patient of his, who had attended cloſely to his father, while

labouring under the miliary eruption of which he died, a few days after his death, was attacked with a ſlight fever, which in a day or two left him. Barald accidentally meeting the young man, whom he had left perfectly recovered, perceived him covered with a crowded eruption of puſtules, perfectly like thoſe which had appeared on the ſkin of his father.

* *Syſt. morb. ſymp.* † L. c. p. 2. 3. ‡ *Ib.* p. 54. ‖ L. c. p. 78. § 162. *in not.* 5. and p. 29. § 58. § L. c. p. 73.

398. Likewiſe the miliary eruption, which prevailed at Novare in the year 1755, deſcribed by Antonius De Auguſtinis, is ſaid to have been ſometimes propagated by contagion *. And, as Barald remarks †, it is nothing uncommon for the miliary puſtules to appear in a perſon, without being accompanied with any other concourſe of ſymptoms, in the ſame manner as ſmall-pox attacks mothers, and other people who attend infected children, and ſometimes carry them in their arms, although they have already experienced the complaint. This fact is confirmed by the teſtimony of Allioni, in the following paſſage: "A lady of diſtinction, in conſequence of paying very cloſe attention to her daughter, while labouring under the diſeaſe, and rubbing her with her own hands, was affected with an efflorescence on the hands and arms, attended with no inconvenience: on this efflorescence,

after continuing for ſome time, ſuddenly diſappearing, ſhe was ſhortly after affected with the ſame diſeaſe ‡." Nor do I conſider it as leſs probable, in the ſame manner as the variolous fever takes place without ſmall-pox, that the miliary fever ſometimes occurs without miliary puſtules. For I have more than once obſerved a fever, eſpecially when the miliary eruption prevailed epidemically, which exhibited all, or moſt, of the marks of the miliary diſeaſe, except the eruption. The miliary virus ſeems then to paſs readily through the cutaneous veſſels, under the appearance of ſweat, or vapour. But unleſs a complete criſis of the miliary fever takes place, or if the convaleſcents expoſe themſelves to the air too ſoon, or the perſpiration and other excretions are neglected, or ſuppreſſed, or if they indulge improperly in too rich living, they are apt to relapſe into the complaint, which ſometimes then proves fatal. Some, in conſequence of the remains of the diſeaſe being retained, fall into chronic affections. Sometimes the cough remains obſtinately, and occaſionally terminates in a ſpitting of blood, and conſumption. Others are attacked with hydrothorax, or anaſarca, and with leucophlegmatic, or œdematous ſwellings. In others ſlight fevers ſupervene, which prove tedious, conſumption, ſwellings, waſting, furunculi, abſceſſes, arthritic pains, ſwelling of the breaſts in puerperal women, and an immoderate

flow of the urine and lochia; impaired memory, hypochondriacal and hyſterical paſſions, ſlow waſting of the body, attended with anorexia ‖, and other chronic and obſtinate diſeaſes. I knew a young man, who, after eſcaping from the miliary diſeaſe, was firſt affected with mental becillity, amounting almoſt to fatuity, and afterwards with melancholy delirium, which continued long and obſtinately.

* L. c. † L. c. ‡ L. c. p. 78. *in note*. ‖ Vogel, l. c. § 140.

DIAGNOSIS.

399. ALTHOUGH every perſon muſt perceive, from the hiſtory of the diſeaſe hitherto delivered, that the miliary eruption is eaſily recogniſed, eſpecially after the appearance of the puſtules; before the eruption, namely, in the firſt days of the diſeaſe, not a few phyſicians aſſert, that the diagnoſis is ſcarce poſſible, or at leaſt very uncertain and fallacious, eſpecially when the diſeaſe is anomalous, diſguiſed, or complex. But if the phyſician pays careful attention to all the preceding and concomitant ſymptoms, he will be able, from a concourſe of ſymptoms, both of a general and particular kind, to draw a concluſion, without the imputation of raſhneſs, concerning the future appearance of the miliary diſeaſe. Theſe ſymptoms in general are, the preceding pains, of which I have already ſpoken *, frequent ſhiverings on the

firſt days, a copious diſcharge of ſweat breaking out at firſt, which does not prove critical, often clammy, oily, and having a peculiar acid and corrupted ſmell †,—which Damilani looks upon as the principal and ſureſt ſymptom ‡,—oppreſſion of the breaſt, with a ſenſe of conſtriction at the ſternum, and chiefly at the left ſide of the thorax ‖, more or leſs uneaſy, and generally more intenſe than in any other exanthematic diſeaſe, forcing the patients every now and then to ſigh and complain §; the greateſt reſtleſſneſs, with conſtant watching, anxiety, difficult and irregular reſpiration, and lowneſs of ſpirits; the perplexity of the patient, heſitating about what the diſeaſe, although it generally appears ſlight, may turn out to be ¶; the fever at firſt being either ſmall, or variable, attended ſometimes with delirium, trembling of the hands, and ſubſultus tendinum **, loſs of ſtrength without a manifeſt cauſe ††; a variable, convulſive, but generally quick and weak pulſe ‡‡; ſleeping of the hands, fingers, legs, and feet, more or leſs ſenſible when it is preſent,—for it is not always preſent ‖‖,—or, in place of it, cramps, as they are called; uneaſy pricking on the ſkin; dry cough, when it is preſent, ſometimes ſlight, ſometimes violent; pain or heat of the throat; difficult, or at leaſt inconvenient deglutition; when the patients compoſe themſelves to reſt, their being apt to awake out of it, with trembling and fear, and

ſtarting of almoſt the whole body, as Hamilton probably was the firſt to obſerve §§, and as I myſelf have frequently obſerved ſince. But if to theſe is added the prevailing epidemy, or the ſuſpicion of the contagion having been received, our conjecture concerning the miliary diſeaſe being about to take place, will be rendered the more probable. I have already obſerved, from Gaſteller, that the pulſe at the beginning intermits, every ninth, eleventh, or ſixteenth ſtroke. Gaſteller conſiders this intermiſſion as of ſuch conſequence, that he does not heſitate to affirm, that from it to a certainty may be foretold the appearance of the miliary eruption ¶¶. But it is by no means neceſſary for the whole of theſe ſymptoms to concur, it being ſufficient that the moſt of them, and ſuch as more particularly belong to the diſeaſe, are conjoined together. Such, therefore, are the marks by which the miliary eruption may be foreſeen, or at leaſt by which that ſpecies of the complaint may be recogniſed, which I have already mentioned takes place without being accompanied with the miliary puſtules. But when the eruption actually takes place, no longer can a ſhadow of doubt be entertained upon the ſubject.

* Hamilton, *De Febr. Miliar.* c. 2. p. 49. 50.

† Barald (l. c. p. 73.) names the peculiar ſmell of this ſweat, as if it were in a ſtate of corruption, *dyſodia*, and affirms that it is never ſo uniformly found in that ſtate in the malignant, or putrid fevers, as it is in the miliary diſeaſe.

‡ L. c. p. 14. & 65. in note *c*, where he says, if this symptom were wanting, although all the others were present, that there was no reason to apprehend the approach of the miliary eruption; and that, though all the others were wanting, the presence of it alone gave reason for apprehending the miliary eruption.

‖ Gasteller, l. c. § Damilani, l. c. p. 14. 15. ¶ *Id. ib.* ** Vogel, l. c. § 137. †† Hamilton, l. c. ‡‡ *Id. ib.* ‖‖ Allioni, l. c. Damilani, l. c. p. 14. §§ L. c. ¶¶ L. c. p. 83. 84.

400. The disease is known to be of a benign kind, from the absence of the severe symptoms, and the general marks of malignity *; from the moderate fever; from an easy and complete eruption of the pustules; and, after it has taken place, from the ceasing of the fever and all its symptoms, or at least from their being so much diminished, that the patient recovers within a few days. On the other hand, the malignity of the disease is recognised from the crafty nature of the fever, and loss of strength, although, in the case of a malignant and fatal complaint, I have known the patients to retain their strength sufficiently; from an imperfect and difficult, or uncertain and fleeting eruption, and chiefly, after the eruption has taken place, from the unexpected aggravation of the fever and all its symptoms, and from the dryness † of the skin, which was formerly wet with copious moisture ‡. Hence it follows, that of all kinds of the complaint that ought to be considered as the mildest which is unaccompanied with fever, or at least has a very

ſlight one, while moſt of the functions of the body remain in their healthy ſtate. A regular diſeaſe is denoted by the eruption taking place at the common period, and not exceeding the uſual bounds; by the increaſe, maturation, and exſiccation of the puſtules being neither haſtened, nor protracted, and not continuing too long; in a word, by the whole appearance of the diſeaſe being unaccompanied with any unuſual ſymptom. In the anomalous, or irregular, ſpecies of the diſeaſe, the following ſymptoms take place. The diſeaſe recedes ſomewhat from its uſual courſe, or aſſumes unuſual and foreign ſymptoms. The eruption takes place imperfectly, partially, and at ſeparate intervals; and each eruption is always preceded by one or two more violent attacks of fever, accompanied with tremors, thirſt, heat, oppreſſion of the breaſt, attended with a ſuffocating ſenſation, and ſlight delirium, until the whole miliary virus, after repeated efforts, is forced to the ſurface, which ſometimes happens within four, five, or ſix weeks at moſt ‖. In this caſe the morbific matter is not all evolved at one time, but at ſeparate intervals. That is to ſay, according as ſome part of it is generated, or extricated from the other fluids, nature is irritated, and the fever is aggravated, and all the ſymptoms return, as if the harbingers of a freſh eruption; on which taking place they are again allayed, and thus freſh tumults and eruptions

come and go, until every part of the heterogeneous principle has been expelled. Barald records many inſtances of a flow and repeated eruption, but the moſt remarkable one is that of a patient in whom, after the hundred and twentieth day, a new eruption took place, accompanied with great itching, and, after returning ſeveral times, at length terminated in the deſquamation of the cuticle *. It did not obſerve the ſame courſe in a patient of my own, in whom theſe ſymptoms took place three different times, protracting the diſeaſe for forty days. Nor did nature intirely free herſelf from the noxious fluid, without the remains of the diſeaſe being transferred to the os ilium, and afterwards to the large inteſtines; exciting in the former a dreadful pain, like an iſchiatic one, in the latter a looſeneſs, accompanied with teneſmus, by which at length both the pain and the reſt of the diſeaſe were intirely reſolved.

* See Chap. I. Vol. II. † *Ibid.* alſo Juncker, l. c. Hoffman, *Med. Rat. Syſt.* l. c. Collin, l. c. Störck, l. c. Gaſteller, l. c. Beretta, l. c. Barailon, l. c.

‡ In the endemico-epidemic diſeaſe obſerved at Corregio, Barald diſcovered three marks of malignity, ſometimes ſeparate, ſometimes conjoined. The firſt was a particular *heavy pain* in the calves of the legs, which began a few days before, and continued to accompany the fever for five, or even ſix days, without being allayed either by ſitting or lying. The ſecond ſymptom was afforded by the *troubleſome* or *dry cough*, which was quickly joined by another, namely, a ſimple phlogoſis of the gums, attended with ſome white ſpots, and a red ſtria ſtretched along the margin of the *velum palati* all the way

to the *uvula*, and terminating there. This phlogoſis was ſometimes reſolved within ſix or ſeven days, ſometimes it terminated in gangrenous aphthæ, which ſtretched to the fauces, œſophagus, palate, gums, and lips (p. 16.). But the cough in moſt inſtances continued until the appearance of the eruption, which took place very ſlowly. From being dry in the courſe of the diſeaſe it became wet, accompanied with a ropy, catarrhal expectoration, at firſt crude, afterwards concocted, which was owing to the congeſtion of the lungs, and would have certainly occaſioned ſuffocation, unleſs a proper plan of cure had been employed (p. 17.). Beſides theſe ſymptoms, he frequently obſerved a *lumbago*, which ſometimes became troubleſome before the acceſſion of the diſeaſe, and continued to accompany it throughout its courſe *(ib.)*. Laſtly, he remarks, that the patients were uniformly incapable of bearing the light *(ib.)*.

‖ Some probably will ſuppoſe that the *anomalous* ſpecies of the miliary eruption does not differ from that which we have named *ſecondary*. For in both the eruption takes place more ſlowly than in the regular complaint, which almoſt conſtitutes its proper character. They may therefore ſuppoſe that I have ſet down one or other of them ſuperfluouſly, alleging either that the ſecondary eruption is referable to the anomalous, or *vice verſa*. But there is this diſtinction between them, that the eruption, as being the effect of another diſeaſe, coming on at its height, or towards its termination, wants the chief ſymptoms by which the miliary diſeaſe is characteriſed, particularly ſuch as generally precede the eruption (399.); while this is by no means the caſe in the anomalous complaint. I therefore hope, that on reflection they will allow that I have neither ſet them both down, nor ſeparated them unneceſſarily.

§ L. c. p. 54. et. ſeq.

401. The matter is involved in greater obſcurity when the miliary diſeaſe deceives us under the appearance, or diſguiſe, of other diſeaſes,

when it is named *larvatus*, or *perſonatus*. For it not unfrequently puts on the appearance of many other diſeaſes, by which the phyſician is apt to be miſled. I have already mentioned (390.) that it ſometimes aſſumes the appearance of *hyſteria*, and *hypochondriaſis*, or intermitting, or catarrhal and rheumatic, or inflammatory (396.), or bilious and gaſtric, fever. I ſhall now proceed to point out other diſeaſes, whoſe appearance and nature it reſembles ſo much, that it is a very difficult matter to diſtinguiſh it till the eruption actually takes place. Theſe diſeaſes are, pleuriſy, peripneumony, angina, rheumatiſm, gout, apoplexy, epilepſy, nephritic colic, eryſipelas of the face, and others, but more frequently thoſe juſt mentioned. For in theſe caſes the miliary fomes attacks this or that part before being carried to the ſurface, and, ſettling there, reſembles the particular diſeaſes of theſe parts. Hence in ſuch caſes the miliary diſeaſe is properly named *larvatus*, or *perſonatus*, becauſe the affections, the appearance of which it aſſumes, intirely depend on the very ſame cauſe; while the *complicated* ſpecies is really conjoined with another diſeaſe having another cauſe, as ſhall be ſhewn hereafter. Deliſle adduces examples of the miliary diſeaſe *, which occurred diſguiſed under the appearance of profound coma, attended with delirium and tinnitus aurium. In the monaſtery of St Lazarus, at Milan, one of the nuns, named Bellinia,

was attacked with the complaint, attended with conſtant delirium, almoſt perpetual cynical ſpaſm and riſus ſardonicus, together with loſs of ſtrength. The eruption only took place about the fourteenth day, and afforded ſuch relief to all the ſymptoms, that hopes of a recovery were entertained; but after the ſeventeenth day ſhe died convulſed, in conſequence of a metaſtaſis having taken place. Hamilton alſo records a caſe of the miliary eruption which ſet out with the appearance of a furious delirium †. Another caſe is related by him of a particular miliary fever, which firſt put on the appearance of a hyſterical affection, next that of convulſions, and laſtly reſembled an obſtinate and very remarkable ſyncope, or aſphyxia ‡; as alſo a third, in which a palſy of the lower extremities continued almoſt to the termination of the diſeaſe ‖. The ſame author has likewiſe given us an inſtance of the miliary diſeaſe commencing with apoplexy §. And attentive obſervers will eaſily find inſtances of its reſembling angina. One well deſerving of notice may be ſeen in the elegant Diſſertation of Beretta, already quoted ¶. But pleuriſies and peripneumonies, which conceal the miliary eruption, are of ſtill more frequent occurrence, and are generally ſucceſsfully reſolved by the eruption of puſtules occurring. I have elſewhere adduced the hiſtory of pleuripneumonia concealing the miliary eruption, which

was at length manifeſted on the ſeventh day by the efflorescence of the puſtules **.

* L. c. † L. c. p. 147. ‡ *Ib.* p. 113. ‖ *Id. ib.* p. 90. § p. 83. ¶ *Diſſ. Cit.* p. 51. in note. ** *Sagg. di Med. Prat.* Dall' Armi, P. 2. p. 137.

402. But it is of great moment in proper time to recogniſe the diſguiſed miliary diſeaſe, ſuch as I have exhibited it (401.), before it betrays itſelf by the actual eruption. For it generally diſtreſſes the patient for ſeveral days, and keeps the phyſician in ſuſpenſe, before the efflorescence appears, and the veil is removed. But this is the difficulty. The reſult of long experience, and a careful examination of all the phenomena, has taught me in the firſt place, that the diſeaſe under ich the miliary one is concealed is always attended with ſome extraneous ſymptom, foreign to its real nature, when it is ſolitary and genuine; while, on the other hand, generally ſome ſymptom is wanting, which is otherwiſe peculiar, as it were, to it, or, at leaſt, of very frequent occurrence in it; laſtly, that the remedies, which in other caſes afford ſome relief, do not produce their effects, and, contrary to what uſually happens, are of little or no ſervice. Meanwhile the proper marks of the diſguiſed miliary eruption are not abſent, namely, the profuſe and conſtant ſweats, affording no relief, and having an acid or fetid ſmell, the oppreſſion of the breaſt, cauſing ſighing and complaining, the laborious, irregu-

lar reſpiration, the ſleeping of the limbs, cramps, and nervous affections, frequently reſembling hyſterical or hypochondriacal ones, languor, fainting, a variable pulſe, generally contracted and irregular, diſturbed ſleep, and the other ſymptoms already enumerated (389.). Add to this, that in moſt diſeaſes, not to ſay the miliary fever, the ſymptoms on the firſt days of the complaint generally appear milder, gradually increaſe, and attain their height; while, in the diſguiſed ſpecies, at the very beginning they appear violent, ſevere, and dangerous, and attack the patient as it were ſuddenly, and do not abate before the puſtules break out. For it is only then that all the ſymptoms, together with the diſeaſe, under the appearance of which the miliary fever lurked, are diminiſhed, and ceaſe, while the eruption nevertheleſs performs its uſual courſe; excepting when it is imperfect, or too ſlow, and the diſeaſe, which the miliary one reſembles, has taken deep root, and paſſed into an *eſſential* one; for in that caſe it likewiſe holds on, and, even when the eruption takes place, does not ceaſe.

403. Let us illuſtrate this by ſome example. Suppoſe the diſeaſe to aſſume the appearance of pleuriſy. The pungent pain of the ſide, the cough, the expectoration being tinged with blood, the difficult reſpiration, and acute fever, will denote the preſence of the pleuriſy; but the great-

neſs and uniform hardneſs of the pulſe will be wanting, or not ſo great, as in real pleuriſy; the blood drawn at firſt will either be without the pleuritic coat, or it will not be very coherent, or it will have a lax craſſamentum, or will abound with ſerum, or appear ſhining and crimſon coloured; nor will that relief be obtained which bleeding otherwiſe uſually brings, at leaſt for a few hours. The pleuritic pain will frequently ſhift its ſituation, and waver *, and the expectoration, from being red, will become yellow, or pale, or livid. Or if the pain remains fixed and acute, as ſometimes happens, neither the fever nor pulſe will correſpond with it. But if, alſo, vomiting, or nauſea, or unuſual and conſtant reſtleſſneſs, without any evident cauſe, and not referable to the ſeverity of the pain, haraſs the patient, or the heat exceeds the pulſation of the arteries; if the thirſt is leſs urgent than the degree of the heat would give reaſon to expect; if the tongue is covered with a white or yellow mucus; if the patient is diſtreſſed with the moſt obſtinate watching, which cannot be derived from the pain; if ſpaſmodic affections of the belly, reſembling hyſteria, or hypochondriaſis, borborygmi, languor, fainting, anxiety, and premature ſweats, without being attended with any relief, are combined together; it then appears that another kind of complaint, to which theſe ſymptoms are peculiar, is lurking under the maſk

of pleuriſy. The twenty-ninth obſervation of Dallarmi, together with another of mine ſet down in the additamenta, if conſulted, will afford ſome aſſiſtance to ſtudents, and thoſe whoſe own obſervations are not of ſufficient extent to guide their practice †.

* Allioni, l. c. c. 6. § 99. † *Sagg. di Med. Pratic.* P. 2. p. 129.

404. A perſon of diſtinction, who had paſſed his ſixtieth year, of the ſanguine temperament, and a good habit, in conſequence of catching cold while exerciſing in damp air, was ſeized with an acute fever, attended with difficult reſpiration, catarrhal expectoration, tinged with blood, excited by a ſlight cough, there being preſent at the ſame time debility, a great tendency to ſleep, ſtupor, and ſlight mental derangement, profuſe ſweat, a great and ſtrong pulſe, but not very hard, and indiſtinct ſpeech; and all theſe ſymptoms came on of a ſudden as it were, and at the very beginning of the diſeaſe. Notwithſtanding of repeated bleeding, ſcarce any relief was obtained; the panting, deep and irregular reſpiration, the cough, tendency to ſleep, and the ſtupor and inſenſibility, remained in the ſame ſtate. The continued remitting fever repeated its paroxyſms in the evening, the pulſe being at firſt depreſſed, afterwards deep, full, and quick, attended with frequent

ſighing, almoſt conſtant ſweating, and thick urine. But in a ſhort time, to theſe ſymptoms were added thin bilious ſtools, and a tympanitic ſwelling of the belly. Bliſters were applied to the arms and legs, with ſome relief to the head; and cathartics and injections were adminiſtered to remove the colluvies and bile collected in the inteſtines, and to check the ſpaſms ariſing from hence. In the mean time, wh e other remedies poſſeſſing a reſolving and inciding property were propoſed to free the lungs, towards the evening of the ſeventh day, the miliary puſtules appeared all over the ſurface, which not only diſcovered the true nature of the diſeaſe, but removed all the ſymptoms of the breaſt, head, and belly, and mitigated the fever ſo much, as gradually to produce a perfect criſis; which happened on the fourteenth day.

405. Enough then of the *diſguiſed* ſpecies of the miliary diſeaſe. I ſhall next proceed to the *complicated* one. There is a great reſemblance between them; for in both of them the miliary eruption is combined with ſome other diſeaſe. Hence ſome have frequently confounded the *diſguiſed* and *complicated* ſpecies, while, however, they ought to be carefully diſtinguiſhed, and conſidered apart. But the whole difference conſiſts in this, that the former is cauſed by the ſame miliary fomes, and the latter proceeds from a different cauſe; that the former, on the

miliary puſtules breaking out, at once diſappears almoſt intirely, while the latter does not, unleſs its cauſe by accident is removed at the ſame time, and it has fortunately performed its courſe. But the diſeaſes with which the miliary eruption is moſt frequently combined * are, the petechiæ, ſmall-pox, meaſles, ſcarlatina, pleuriſy, and primary peripneumony, gout, arthritis, genuine intermitting fevers †, gaſtric fever, the *tritæophya bilioſa*, perhaps alſo the ſlow remitting nervous fever, child-birth, aberration of the milk, diminution, or ſuppreſſion, of the lochia, and ſometimes inflammation of the uterus; nor is it inconſiſtent to ſuppoſe that it may be combined with any other diſeaſe. Barald ‡ twice mentions its having been combined with phthiſis, but it at that time prevailed epidemically. I, however, have obſerved the complaint, when ſporadic, ſupervene after a fracture of the thigh-bone. It was the ſummer-time, and in order to enjoy the cool night-air, Francis Gypſius, a young nobleman of Fayence, in perfect health, uſed to walk up and down the city. One night he ſtruck againſt a large ſquare ſtone, in conſequence of which falling with great violence, he broke his right thigh bone. Next day he was attacked with fever, accompanied with frequent ſhiverings. Shortly after very copious ſweats coming on, and watery and copious urine being diſcharged, full miliary puſtules broke out upon the ſkin,

in great numbers, without any relief to the ſymptoms and fever. Nay, the ſweat was ſuppreſſed, the urine became more ſcanty and deep coloured, delirium, convulſions, and almoſt ſudden death ſupervened. The puſtules ſtill remained full of matter, and ſome of them, principally about the neck and breaſt, were filled with a whitiſh, purulent fluid. He was cut off, therefore, during the maturation, a few days after the commencement of the fever ‖.

* Allioni, l. c. c. vi. p. 52.

† I here mean intermitting fevers, not of the ſpurious kind, ſuch as the eruptive fever before the appearance of the eruption frequently reſembles, as I have already remarked (386.). Nor do I mean thoſe ones which are really intermitting fevers, but attended with the miliary eruption. For in them the miliary eruption ſhews itſelf at every acceſſion, and, generally diſappearing during the time of the apyrexia, is therefore conſidered really as an effect, or ſymptom, of the fever itſelf (Vol. I. par. 178.). Were it not ſo, it would be diſcuſſed, together with the fever, by means of the peruvian bark. By which argument, independent of others, I am chiefly induced to ſuppoſe, that the ſecondary, or ſymptomatic miliary eruption, ought not to be intirely rejected. I therefore here underſtand the tertian, or any other genuine intermittent, of whatever type, which by no means depends upon the miliary fomes, and does not of itſelf occaſion the miliary eruption, but which is accidentally combined with it, and is eaſily removed by the bark, without the miliary diſeaſe then terminating.

‡ L. c. *ib.*

‖ Damilani alſo names that ſpecies of the miliary diſeaſe *complicated*, which is combined with other diſeaſes, differing in their nature. It cannot be recogniſed and diſtinguiſhed, ex-

cepting by its pathognomonic marks, which, however, as he acknowledges, do not appear at firſt, but only at the *height*, or during the *inclination* of the diſeaſe with which the miliary eruption is combined. Hence, if I miſtake not, we may infer, that this author ſuppoſes that ſome primary diſeaſe, as it were, precedes, which again is ſucceeded by, the miliary eruption. Nay, he adds, that unleſs the former diſeaſe is overcome, that the latter, namely, the miliary one, which is removed with the greateſt difficulty, threatens a fatal event. But, with deference to his authority, I doubt whether that diſeaſe can be called truly *complicated*. For theſe ſymptoms are wanting which uſually precede and announce its future appearance, and the latent fomes lurking in the ſyſtem. As the phenomena, therefore, of the miliary eruption appear only at the *height*, and during the *inclination* of the other diſeaſe, which has preceded it; it appears to me more probable, that the miliary eruption, which follows, ought to be conſidered as an effect of the depravation of the fluids, occaſioned by the former ſevere and dangerous complaint. But if this is the caſe, as I ſuſpect it is, it follows that this eruption ought to be rather called *ſecondary* and *acceſſory*, than *complicated*; as that one is *ſecondary* which breaks out towards the concluſion of putrid or inflammatory diſeaſes, or upon dead bodies, and which therefore the author names *mortua*. In fact, the diſeaſe, the hiſtory of which he has adduced in the twenty-firſt page, as of the *complicated miliary fever*, was nothing elſe, in my opinion, than the *ſecondary* diſeaſe. A ſtout young woman, of the ſanguine temperament, was attacked with peripneumony, during the continuance of which ſhe was nine times bled. When the peripneumony was drawing to a cloſe, the miliary puſtules broke out. She got intirely rid of theſe, and the peripneumony together, towards the end of three weeks. It appears evident, that as the miliary puſtules broke out during the inclination of the former diſeaſe, without exhibiting any of their uſual ſymptoms, as far as appears from their hiſtory, they were *ſecondary*, and, on account of reſolving the diſeaſe favourably,

critical. He likewiſe mentions another inſtance of the *complicated miliary diſeaſe*, in a very ſtout young man of about twenty-ſeven years of age, in whom, when labouring under a pleuriſy, which had attained its height, namely, about the eighth day from the beginning of the diſeaſe, a very copious miliary eruption took place. The patient did not get better in conſequence, for he died in convulſions on the eleventh day (p. 22.). This ſpecies ſeems to have been of the *ſecondary* and *ſymptomatic* kind. But the third caſe, which he mentions in p. 23. was probably a *bilious pleuriſy combined with the miliary diſeaſe*, becauſe, before the eruption appeared, it threatened the breaſt firſt, next the head, and, laſtly, the breaſt again, in various ways; which not unfrequently happens in the latent or complicated miliary miaſma, and is, as it were, peculiar to it. While theſe obſervations were in the preſs, my very worthy friend, and learned colleague, Leopold Thonhauſer, communicated to me a hiſtory of the ſecondary miliary diſeaſe, which aroſe *per epigeneſin*, unleſs it be conſidered as complicated, and, which deſerves more notice, *critical.* In the month of January of the year 1785, he was called to a girl of thirteen years of age, who then laboured under a fever, cough, and ſpitting of blood; and as he found the fever violent, the cough very troubleſome, and the reſpiration difficult, attended with a hard, ſtrong pulſe, he propoſed letting blood, which he was afterwards obliged to repeat three times; for the blood always appeared inflammatory. By repeated bleeding, antiphlogiſtic remedies, and pectorals, he was enabled to remove the inflammatory ſymptoms, although the cough, fever, and ſpitting of blood continued. As, therefore, an amphimerina, ſpitting of blood, obſtinate cough, and conſequent emaciation, continued to diſtreſs the patient, be concluded that the complaint had degenerated into confirmed, or ulcerous, phthiſis. At length, about the beginning of the month of March, after ſome aggravation of the cough and fever, and greater difficulty of breathing, on a ſudden the miliary eruption appeared, partly white, partly red, firſt on the inferior extremities, and

afterwards on the ſuperior ones, but gradually and ſparſely, until the whole ſkin was covered. When it began to appear, and the more the puſtules increaſed and ripened, the cough was greatly relieved, the fever abated, the appetite, ſleep, and ſtrength returned. The eruption continued about four weeks, freſh miliary puſtules ſucceeding, before they arrived at the exſiccation. The exſiccation was at length ſucceeded by an actual deſquamation of the epidermis, which fell off in cruſts; which went on ſlowly, according as the eruption had done, inſomuch that it was not completed till the commencement of the month of May. After which the patient began to recover greatly, her ſtrength, appetite, and former plumpneſs returning. The cough, however, although much leſs ſevere, a ſlow fever, and ſpitting of blood, though very ſcanty, ſtill continued; which, however, did not prevent the patient from getting up, walking about, and applying with good ſpirits to her amuſements and occupations, and entertaining hopes of recovering her former good health.

406. With regard to the combination of the miliary eruption with the petechiæ, I have already ſpoken (325.). It is found moſt frequently occurring in the epidemic petechiæ, leſs frequently in the ſporadic. This complication was long ſince obſerved at Trent by Roboret *; at Verona, by Petrus A Caſtro †; at Fayence, by P. Salius Diverſus ‡, to paſs over certain of the moderns ‖. Such a complication likewiſe was obſerved twenty-nine years ago at Lauſanne, and afterwards at Vevey §. Two years afterwards ¶, namely, in the year 1758, the petechiæ and miliary eruption prevailed at Vienna, ſometimes ſeparately, at other times together. Long before either of them, the complicated miliary eruption had been frequently obſerved by Felix Aſtius at Mantua **, and

was very lately noticed by Trollius, in the epidemy which prevailed in the year 1783 ††. The miliary eruption is ſometimes conjoined with the petechial one, and obſerved interſperſed among the petechial ſpots, ſometimes it ſupervenes on them when preſent, or ſucceeds to them when they diſappear, or begin to go off. There are generally preſent ſymptoms of both diſeaſes, more or leſs manifeſt, according as one or other predominates. But if the one ſucceeds to the other, the petechiæ generally appear, and after retiring are ſucceeded by the miliary puſtules. Then "the urine," as Allioni remarks, "which was at firſt turbid and thick, becomes thin, a certain degree of *pricking numbneſs*, called *ſleeping*, is felt; the deafneſs goes off; the buzzing is ſucceeded by tinnitus aurium; the ſopor paſſes into watching, or *coma vigil;* the weakneſs goes off, the pulſe riſes and becomes quicker." He adds likewiſe, that the delirium is prodigiouſly increaſed, as ſoon as the *miliary miaſma* reaches the ſkin; nay, that, if the miliary puſtules ſupervene prematurely on the petechiæ, fatal convulſions ariſe; while, if it comes on later, and after a conſiderable interval, there are *hopes of a return of health* ‡‡. In the epidemy which prevailed at Vienna in the year 1758, when the miliary ſupervened on the petechial eruption, it was preceded by ſlight ſhivering; to which were added oppreſſion and anxiety at the cheſt; and laſtly came on the miliary puſtules,

which were white, in great abundance, and afforded relief. Thoſe patients, in whom this eruption was not preceded by anxiety, diſcharged a great quantity of urine, or, if the urine was ſcanty, its place was ſupplied by a ſlight diarrhœa, which afforded relief ‖‖. In the town of Belgiojoſum, when the petechial diſeaſe had taken a favourable turn, the fever was ſuddenly aggravated, ſome of the ſymptoms were increaſed, and continued ſo for two or three days. Afterwards a favourable eruption having taken place, all the ſymptoms abated, and the patient gradually recovered §§. The double diſeaſe is generally attended with greater danger, or at leaſt proves more tedious; but its favourable or unfavourable termination generally correſponds with the benignity or malignity of the eruption which ſupervenes. Nor is the period of the eruption's appearance attended with any uniform occurrence; for I have ſeen it at one time benign, when it appeared ſoon, at another malignant, when it appeared later; and *vice verſa*.

* L. c. † L. c. ‡ L. c.

‖ In the epidemy which prevailed at Wemding in the year 1689, and in Donavert, the miliary eruption was combined with the petechiæ; (*Roſin. Lentil. Miſcel. Med. Prat. N. C. Dec.* 3. ann. 5. and 6. *append.* p. 132.); in Wratiſlaw, in the year 1715, (Godofr. Klaunning, *Obſ. Circ. Febr. Malig. Petech. Eph. N. C.* cent. 5. obſ. lxiii.); as alſo in the epidemy of Wratiſlaw and Sileſia, which prevailed ann. 1737. Fabr. Ferd. Pauli, *Hiſtor. Febr. Catarrh. Malign. In. Act. N. C.*

vol. vi. obſ. 66. &c. § Tiſſot, Lettr. a Mr Hirzel, p. 5. ¶ Störck, *an. med.* 1. *menſ. Jul. et Aug.* ** *Terzo an. Medic. Mantuan. o ſia Storia delle Malattie del* 1783, &c. p. 83. Vid. *Opuſc. Med. Prat.* Targion. T. 8. †† Lettr. 3. Targion. *Op. Med. Prat.* T. 8. p. 248. ‡‡ L. c. § 108. ||| *Ib.* § 109. §§ Störck, l. c. *menſ. Aug.* p. 15. & 16. ¶¶ Trollius, l. c.

407. When the miliary eruption is combined with ſmall-pox, meaſles, or ſcarlatina, it is not an eaſy thing to foreſee it. But as it is generally combined with malignant ſmall-pox, meaſles, and ſcarlatina, the malignity of theſe diſeaſes may cauſe us to apprehend the preſence of the miliary eruption, and much more certainly if the well-known diſpoſition of the prevailing epidemy is taken into conſideration. In the few caſes of the ſmall-pox and miliary complaint being combined, which were treated by Allioni *, he obſerved, that " a moſt intenſely ſevere pain in the loins" preceded; that " the ſmall-pox firſt broke out, and afterwards the miliary puſtules;" that the fever on the appearance of the ſmall-pox " did not remit, together with the ſoft, hardiſh pulſe, but that the contraction and quickneſs of the pulſe increaſed; that the increaſing of the ſmall-pox checked the miliary puſtules; that ſubſultus tendinum frequently took place; that the patients, becoming delirious, with a very tenſe pulſe, died on the ſixth, or ſeventh day;" and that the pricking ſenſation, which is the principal mark of the miliary diſeaſe, was not very ſenſible,

nay, only came and went. He mentions, moreover, from Camerari †, that when the ſmall-pox attained the height of ſuppuration, white miliary puſtules ſupervened, followed by a favourable termination. But he makes mention, from Haller ‡, of malignant ſmall-pox which were followed by the miliary eruption. Laſtly, in two caſes in which the miliary eruption was combined with meaſles, he remarked that the inflammation of the throat and cough, which precede meaſles, diſtreſſed the patient much; that the eruption of the meaſles took place firſt, attended with great heat, and that they were next ſucceeded by the eruption of miliary puſtules in different parts; but that the pricking numbneſs of the fingers, hands, and feet, occurred frequently in them, accompanied with the other ſymptoms of the miliary diſeaſe; and that the diſeaſe proceeded in the ſame manner as the benign, or, as he calls it, the moſt ſimple ſpecies ‖. It is probable, alſo, that the combination of ſcarlatina with the miliary eruption ſcarcely differs from the preceding one.

* L. c. c. vi. § 110. † *Ib.* § 111. *Act. N. C.* vol. ii. p. 338. ‡ *Ib. ex Opuſc. Pathol.* p. 120. ‖ L. c. § 112.

408. The miliary diſeaſe, when it is combined with pleuriſy, or peripneumony, is frequently like the diſguiſed ſpecies, inſomuch that one may be eaſily taken for the other. But I have already ſhewn (402.), as far as lay in my power, in what

manner the diſguiſed ſpecies betrays itſelf. I ſhall now point out in what manner the complicated ſpecies may be diſtinguiſhed. In it the pleuriſy and peripneumony exhibit all the ſymptoms which indicate the preſence of theſe diſeaſes when they are ſolitary; nor do they at all recede from the peculiar combination of ſymptoms. Likewiſe the cauſes which induce them have preceded, and at the ſame time the ſeaſon of the year, and ſtate of the air, are ſuch as favour their production; and this will appear much more clearly, if, in the mean time, either ſtationary or epidemic diſeaſes prevail, or ſeem occaſionally to intervene. Nor on the appearance of the miliary eruption do they ceaſe, as it has been ſhewn happens in the diſguiſed ſpecies, but they go through their courſe as uſual, in the ſame manner as if they were ſolitary, and terminate favourably or unfavourably, according to the diſpoſition and ſeverity of each. Which laſt alſo happens in the miliary diſeaſe combined with gout; for then the gout is not relieved by the eruption, as happens in the diſguiſed ſpecies, but generally performs its regular courſe, which is almoſt always of long continuance. But in its combination with the intermitting fever, beſides the continued remitting fever, with which the febrile miliary diſeaſe is combined, it is uſual for paroxyſms to ſupervene, accompanied with cold or ſhivering, every day, or every ſecond day, which, after paſſing through

their increaſe, height, and inclination, like true intermittents, are reſolved by the uſual ſweats; a continued remittent remaining behind, as generally happens in the proportionatæ and hemitritæi. But they are attended with this fatal conſequence, that on the acceſſion of the cold the miliary eruption ſubſides, and is forced in, and, in conſequence of a metaſtaſis taking place, threatens ſpeedy death. Allioni obſerved a ſimple tertian, in the ſecond or third paroxyſm of which the miliary puſtules had appeared; but during the cold ſtage, when the acceſſion returned, the eruption ſuddenly retiring in occaſioned the patient's death *. He likewiſe makes mention, from the tranſactions of the Royal Society of Berlin †, of the *purpura alba*, combined with a quartan, which at length proved fatal, in conſequence of the miliary puſtules being forced in during the cold ſtage.

* L. c. c. vi. § 107. † Decad. II. vol. vii. p. 102.

409. When the miliary eruption is combined with the acute gaſtric fever (Vol. I. par. 373.), or with the bilious tritæophya (*ib.* 419.), or with ardent fever (*ib.* 422.), or with the ſlow malignant fever named *nervous* (*ib.* 437.), it is perfectly obvious, that the combination is diſtinguiſhed by the marks of theſe fevers, and of the miliary diſeaſe itſelf (399.). It is proper, therefore, to carefully attend to the peculiar marks of theſe diſeaſes. When a looſeneſs is preſent, as fre-

quently happens in the gaſtric fever and bilious tritæophya, Allioni remarks *, that the eruption appears ſomewhat later; namely, on the looſeneſs abating, when the ſymptoms immediately preceding the eruption appear, on the ninth, eleventh, or fourteenth day. Perhaps this was the cauſe of the lingering eruption in the endemic epidemy deſcribed by Barald. For in it the miliary diſeaſe ſeems to have been combined with the bilious tritæophya, which he named a fever of the claſs of bilious ones, ſometimes bilious, ſometimes inflammatory; and in all the patients the eruption appeared †, but much later ‡. It is not an uncommon occurrence for the miliary eruption to be combined with ſuppreſſion of the lochia, and inflammation of the uterus, or aberration of the milk, as I have already hinted (405.). Then the fever attacks the patient immediately after birth, or on occaſion of the milk-fever being uncommonly violent, and is attended with the ſymptoms peculiar to the miliary diſeaſe (399.). The pulſe is very quick, and the lochia flow variouſly, or ſtop. The uterine region is frequently painful and tenſe. But while the ſweats and other ſymptoms of the approaching eruption increaſe, the pain of the uterus diſappears on the appearance of the miliary puſtules, the termination of which, according to Allioni ‖, is generally fatal. Frequently likewiſe the ſecretion of milk is ſcanty, or irregular, or the belly

looſe, or other bad ſymptoms peculiar to puerperal women are preſent; as we ſhall hereafter ſhew, when we come to ſubjoin ſome remarks on the miliary fever of puerperal women.

* L. c. c. vi. § 113. † L. c. p. 77.

‡ For that fever, if its hiſtory is well conſidered, was certainly of ſuch a kind as to appear of a gaſtric, or bilious, inflammatory, ſometimes of a gaſtric, or bilious, putrid, diſpoſition. The eruption appeared on the eleventh, or fourteenth, or twenty-firſt day, and ſometimes was deferred to the fortieth.

‖ L. c.

THE PROGNOSIS.

410. WITH regard to the prognoſis, Allioni juſtly pronounced it to be very uncertain *, as we can place no reliance on the mild appearance of the complaint. For my part, I do not know a more deceitful diſeaſe, inſomuch that when I have to treat it, I never feel myſelf more anxious; which every perſon will be apt to feel himſelf after ſeveral times treating patients labouring under it, or attentively peruſing its hiſtory. I except, however, the ſpecies which is unaccompanied with fever (385.), as alſo that which is named *purpura chronica (ib.)*. For both varieties are free from danger, if rightly treated, and if due attention be paid to the puſtules, to prevent their ſtriking in before the noxious fluid is completely diſperſed. In general, therefore, the febrile ſpecies, as it is called (386.), may be pronounced to be both ſevere and dan-

gerous; with this difference, however, that the *benign* and *regular* ſpecies (400.) is attended with much leſs danger; while the *malignant* and *anomalous* kind is attended with much more, eſpecially when it is communicated by contagion (397.). And it is highly probable, that the *diſguiſed* (401.), or *complex* (405.), ſpecies is generally more ſevere and dangerous than the ſimple complaint, as attacking the patient with a greater number of ſymptoms, or as being compoſed of two diſeaſes equally ſevere, or one or other more ſevere, ſcarce either of which alone nature would be fit to bear. And, among the more fatal combinations, is ranked the combination with the malignant ſmall-pox, or petechiæ of a bad kind, or ſevere epidemic diſeaſes †.

* L. c. c. viii. § 115. † Allioni, l. c. § 135.

411. The degree of the danger is proportioned to the ſeverity, intenſity, number, and duration of the ſymptoms, and importance of the parts affected. Therefore the more intenſe, numerous, obſtinate, and laſting the ſymptoms are, the greater the number, and the more the importance of the parts affected are, the more dangerous is the diſeaſe. Hence thoſe ſymptoms which affect the head and nerves, as delirium, convulſions, watching, headach, and ſubſultus tendinum, are conſidered as being more ſevere than the nauſea and vomiting, indicating an affection of the *primæ viæ*; and ſuch as affect

the breaſt are conſidered as moſt dangerous, and almoſt always fatal, if they are not relieved by a ſpeedy and copious eruption *. Nor is it abſurd, as Allioni ſuppoſes, to conclude that the greater or leſſer degree of danger generally depends upon the quantity of the miliary poiſon; particularly the viſcidity and lentor of the fluids and lymph, by which it is held faſt; and the denſity, and greater or leſſer irritability of the ſkin †; whatever truth there may be in the opinion which he entertains, that a great many of the moſt ſevere ſymptoms may be derived merely from the irritation of the ſkin, and the ſpaſms occaſioned by it. Certainly greater effects are to be expected from its abundance than ſcantineſs; and probably they do not always depend on its quantity only, but alſo more frequently on its badneſs, and greater malignity. For a great abundance of the poiſon not only produces more derangement in the ſyſtem, but is likewiſe ſeparated from the other fluids with greater difficulty, and ſtill more if they are ſo denſe and ſluggiſh as to retain it adhering to them more firmly. And it is undeniable, that, in conſequence of the denſity and irritability of the ſkin, the exanthematic matter is either not received by it, or when forced thither is repelled by its corrugation.

* Ludwig, l. c. P. I. c. i. § 218. Gaſteller, l. c. c. v. p. 91. & 95. † L. c. § 116.

412. The time of the eruption alſo affords a favourable, or inauſpicious, prognoſtic. Moſt people dread a ſpeedy and premature eruption, and commend a tardy one; becauſe the firſt takes place without concoction, and the latter, after going through the concoction, is favourably reſolved. Among theſe is Allioni, who does not heſitate to affirm, that the ſooner the eruption appears, the longer the diſeaſe is protracted *; and that ſeveral eruptions are neceſſary for carrying off the miliary matter. Damilani, alſo, is ſo much perſuaded of the truth of this, that he conſiders it as a certain fact, that, on the whole, the later the puſtules break out, the more certain are the hopes of a recovery. According to his opinion, therefore, a perſon has greater reaſon to expect a ſpeedy recovery in whom the eruption takes place after three weeks, than one in whom, *cæteris paribus*, it occurs at the end of the ſecond week only, and ſo forth †. Which aſſertion, though it be allowed by many, and I obſerve it univerſally admitted as a certain axiom, muſt not be received with implicit credit. For I have repeatedly noticed a very late eruption of puſtules in the malignant and fatal miliary diſeaſe, and, on the other hand, a very early one taking place in the benign ſpecies of the complaint, which terminated favourably. It is well known likewiſe, that in the anomalous complaint the eruption is very late of appearing, and no leſs

danger is to be apprehended from that circumſtance, nor is its termination leſs doubtful; to ſay nothing of the miliary eruption, which ſometimes breaks out generally previous to death, very ſeldom proving ſalutary, at the end of ſome diſeaſes, particularly of putrid and malignant ones, with which they are combined, or by which they are generated. Barailon, therefore, with good reaſon affirmed, that the ſudden and ſpeedy appearance of the eruption implies nothing fixed, or invariable ‡. Moreover, in my opinion, they falſely accuſe the early eruption of crudity; and, on the other hand, approve of a lingering one, as being elaborated by concoction; for neither does the primary eruption require it, nor is it capable of actual concoction, as the other diſeaſes generally are; but it is cured by the heterogeneous and poiſonous miaſma being ſeparated from the ſound fluids, and quickly expelled. Which occurs very evidently chiefly in ſmall-pox, meaſles, the ſcarlet eruption, and eryſipelas. But if ever any bad conſequence is threatened by the premature eruption of the puſtules, I think that it ought not to be aſcribed to the time of their appearance, but to the quantity of the morbid fomes for the reception of which the ſkin alone is not adequate. But a ſlow and lingering eruption, when it is to be ſucceeded by an unfavourable event, or long continuance of the diſeaſe, more truly points out the weakneſs of nature,

on account of which the ſyſtem is incapable of ſeparating and expelling the noxious fluid; or on account of the ſluggiſh and viſcid blood by which it is retained; or the denſity, rigidity, and conſtriction of the ſkin, by which its appearance is prevented. Experience alſo has ſhewn, that, if a copious eruption, or one which is ſufficient for carrying off all the virus, takes place, and remains long, the diſeaſe will be of ſhorter continuance, ſooner terminating in health. Barald ‖, in particular, found this take place in his patients. An imperfect, partial, interrupted efflorescence, unleſs nature performs it by repeated efforts, ought to be ſuſpected, and is frequently dangerous, or renders the diſeaſe more obſtinate. Let it not be ſuppoſed, however, that a very copious eruption is the certain forerunner of a more favourable event; for, if it does not alleviate the other ſymptoms, and render the patient eaſier, it may prove fatal §. If the pulſe, on the eruption taking place, becomes ſoft and full, while the convulſive affections are abſent, and the puſtules increaſe and become full of ſerum, it is a proof that a favourable termination of the diſeaſe will ſpeedily follow ¶.

* L. c. c. 7. § 127. † L. c. p. 51. ‡ L. c. § 157. ‖ L. c. p. 26. § Gaſteller, l. c. c. v. p. 96. ¶ Allioni, l. c. § 119.

413. The colour of the puſtules ſcarcely entitles us to draw any certain concluſion with re-

gard to the event; unleſs, as Ludwig has obſerved *, and as I myſelf formerly noticed 387.), proper attention is paid to the other ſymptoms. Hence ſome conſider the red, others the white ones, as benign. In general, however, the red ones are preferable to the white. Among the white ones, thoſe are conſidered as being of a better kind, the baſis of which is red; the pellucid, cryſtalline, watery and milky ones being looked upon as worſe. Ludwig alſo ſeems to aſcribe ſomething to the colour †, in puerperal women, although at the ſame time he does not overlook the other ſymptoms. For he adds, that if, on the third or fourth day after delivery, the *white miliary puſtules* break out in them, and are attended with delirium, great heat, and other ſevere ſymptoms, they are *always fatal*, eſpecially when they have been preceded by copious ſweat, pale urine, attended with ſtrangury and retention of the lochia; if inflammation of the uterus, and a ſenſe of chillineſs, is perceived in the abdomen, and if the petechiæ break out along with the miliary eruption. He grants, however, that there are ſometimes hopes when the ſymptoms take place ſomewhat more mildly, and the fever abates, attended with a copious diſcharge of fetid matter from the genitals. On the other hand, that in puerperal women, the *red miliary eruption* is milder, if it happens on the fifth, ſeventh, or ninth day, if the ſymptoms are leſs urgent, and

the uſual excretions go on properly. But whether they be red or white, the event is very doubtful, and frequently proves fatal, as Vogel properly remarks ‡. The ſmall, tranſparent, and ſcarcely perceptible veſicles, which I have already mentioned (383.), eſpecially if they are numerous, generally denote a doubtful iſſue, or obſtinate complaint ‖. The quantity of the puſtules alſo affords its prognoſtic marks. The miliary puſtules, when copious and confluent, are the worſt of all, as being moſt apt to fall, and occaſion death §. But thoſe ones are not leſs alarming which appear ſcantily and ſparſely, and break out with difficulty. But, according to Ludwig, who is ſupported by experience, nothing holds invariably in any of theſe reſpects. For the patient's habit of body, temperament, age, the country, ſeaſon, an improper method of cure, neglect of regimen, the prevailing epidemy, and other circumſtances, ſometimes induce a great deal of variety in the complaint. But thoſe which aſſume a brown, black, or livid colour, always afford a bad prognoſtic.

* L. c. P. I. c. i. § 218. † *Ibid.* ‡ L. c. § 140. ‖ Allioni, § 128. Barailon, l. c. § Allioni, l. c. c. vii. § 129.

414. If, after the eruption, the more ſevere ſymptoms ceaſe, or at leaſt abate, it is a favourable ſymptom: on the other hand, it is very unfavourable if they continue, or are aggravated.

The former takes place in the benign diſeaſe, the latter in the malignant *. If, likewiſe, the ſkin does not ſwell, and become ſomewhat tenſe, it is unfavourable. It is alſo a bad ſign if it does not riſe on the application of cupping-glaſſes, and veſicatories do not excite a bliſter on it. Laſtly, thoſe puſtules are bad which on terminating do not occaſion a pricking in the ſkin, but only excite itching †. They indicate either that the matter is carried to the internal parts, or that it is of a very acrid nature. But no eruption is ſo apt to ſubſide, or to ſtrike in and diſappear, as the miliary one ‡. The puſtules which at one time ſubſide and diſappear, at another ſtriking out, are always alarming; for they either occaſion imminent danger, or give riſe to a tedious diſeaſe. The very worſt ſign is, when they diſappear, the patient's being attacked with vomiting, complaining of dimneſs of ſight, hiccuping, raving, and, while he is drinking, ſhrieking out ‖. After ſtriking in, they frequently return with greater ſeverity. Sometimes, however, they ſuddenly ſtrike in, and remain concealed; and this chiefly happens when they are approaching to maturity. They generally then in a ſhort time occaſion death, in conſequence of a metaſtaſis taking place §. From a metaſtaſis taking place to the head, an obſcure delirium ariſes, the eyes grow dim and clouded, and theſe ſymptoms are the forerunners

of immediate and inevitable death ¶. Sometimes the eyes and face become red and ſparkling, and a phrenitic delirium comes on, which is next ſucceeded by convulſions and death. But every other ſtriking in, either of a critical ſwelling or eryſipelas, unleſs the matter is carried to other external parts, or is excreted along with a copious diſcharge of turbid urine, occaſions a dangerous metaſtaſis **. Likewiſe great danger is threatened if the patient gives himſelf up to deſpair, and ſtarts in terror out of his ſleep; which I find firſt noticed by Allioni ††, and afterwards by others, who, however, have not had the candour to acknowledge the ſource from whence they had derived their information. But that kind of fever muſt be reckoned among the very worſt ſymptoms. I have frequently indeed obſerved patients attacked with the ſudden fear of death, ſometimes without other bad ſymptoms being preſent; which happens chiefly at night, and five or ſix hours afterwards becoming delirious, convulſed, and having a great, ſtrong, and very quick pulſe, they were at length quickly deprived of life, ſometimes without the miliary puſtules ſubſiding, or diſappearing. When I find the patient, therefore, affected with this kind of deſpondency in the morning ſubſequent to a reſtleſs, ſleepleſs night, and diſcover that ſome mental derangement has preceded it on the night before, or is then preſent, and that

he is not to be ſoothed into tranquillity, and ſtill more if very thin, copious urine is frequently diſcharged, or from being thin and copious it becomes ſcanty, turbid, and thick, I without delay admoniſh the patient, or his friends, to ſend for a prieſt, and ſettle his other affairs, while there is ſtill time left. Sometimes alſo it happens, that on the eruption taking place, and all the ſymptoms going on properly, all of a ſudden, and without any evident cauſe, the diſeaſe is aggravated with all its ſymptoms, and in three or four hours cuts off the patient. When that happens, Gaſteller ‡‡ affirms, that the fever increaſes in violence; that the head and breaſt are oppreſſed; that the delirium and convulſions come on; that the puſtules diſappear, either in part or intirely; that fainting, ſuffocation, extreme irregularity of the pulſe, and, laſtly, death ſupervene.

* Allioni, l. c. c. 7. § 130. † *Id. ib.* § 128. and § 131. Barail. l. c. § 153. ‡ Vogel, l. c. § 140. || Allioni, l. c. c. 7. § 128. 129. § Ludwig, l. c. c. 1. § 218. Barailon, l. c. § 156. ¶ Gaſteller, l. c. ** Barailon, l. c. § 157. †† L. c. c. 7. § 130. ‡‡ L. c. p. 25.

415. But there are many other ſymptoms which ought to be properly weighed, in order to determine our prognoſis with regard to the danger or ſecurity of the diſeaſe; each of which I ſhall firſt briefly enumerate, and afterwards I ſhall take a general view of them, pointing out the favourable or unfavourable termination

which they are known from experience to give us reaſon to expect. I ſhall therefore ſpeak firſt of the ſweat, which occurs very frequently in this diſeaſe. The more diffuſe, copious, and forward it is, eſpecially when conjoined with a very contracted pulſe, the worſe is it eſteemed to be *. But if, as the eruption is about to appear, or when it is already begun, it intirely ceaſes, leaving the ſkin dry and parched, the apprehenſion and danger are much more increaſed. That, again, which is moderate before the eruption, and continues to flow gently after it, ſo that the whole body ſeems to be wet with vapour, rather reſembling a copious, and uniformly-diffuſed perſpiration, while the ſkin and pulſe are ſoft, and the latter expanded, gives us reaſon to expect a favourable iſſue. But Molinar † affirms, that that which is copious ought to be conſidered in fact as critical, when it breaks out about the height, or at the turn of the diſeaſe, or, as he obſerves, after concoction takes place. Allioni ſuſpects, or rather pronounces, the headach to be bad, if it diſappears on a ſudden before the fourth day, particularly in ſanguine patients ‡. The ſame author, mentioning the *pricking numbneſs* (392. 399.) with which the fingers and extremities of the body are frequently affected before the eruption takes place, ſays, that if it is frequent, and attacks ſeveral parts, it denotes the abundance of the morbid fomes; but

that if it is not frequent, and ſlight, and is attended with a contracted pulſe, ſweat, urine, and other marks pointing out the quantity of the miliary fomes, it threatens death, becauſe it is a proof that it is entangled by the tenacity of the fluids, and incapable of extricating itſelf ‖. But Barailon informs us, that a copious eruption of puſtules may be expected if the fingers are painful §. When the blood which is drawn is found to be of a ſcarlet, florid colour, and without ſerum, it is ſuppoſed to give reaſon for apprehenſion, particularly if a premature eruption takes place ¶. And ſome look upon that which ſhews the buffy coat, and is of a tenacious diſpoſition, as not being leſs to be apprehended **.

* Allioni, l. c. § 122. † *De Miliar. Exanth. Indol. et Tractat.* Vienna, 1764. p. 147. ‡ L. c. § 120. ‖ L. c. § 153. § L. c. ¶ Allioni, l. c. c. vii. § 134. ** Molinar, l. c.

416. As in other diſeaſes, attending to the pulſe in this one is of the greateſt conſequence. For many prognoſtic ſymptoms are afforded by it. A very contracted pulſe portends a ſevere diſeaſe; and ſtill more ſo, the weaker, more inconſtant, and irregular it is. If it likewiſe intermits, and the intermiſſion does not proceed from irritation of the *primæ viæ*, the diſeaſe in that caſe is ſaid to be much more dangerous. Allioni * conſiders it as being decidedly of a pernicious kind, if, after the eruption has taken

place, the pulſe ſtill continues contracted, quick, and tenſe; for from this tenſion he conjectures that convulſions are coming on. But Barailon, from the convulſive pulſe remaining after the eruption, or becoming ſtill more convulſive, does not ſuſpect the approach of convulſions, but that a freſh eruption of the puſtules is about to take place †. Shortly after, however, he mentions that a convulſive pulſe is of a very bad kind, and that a *formicating* one proves fatal; and, laſtly, that immediate death is indicated if the pulſe ſeems ſo empty, as to yield and become obliterated by every preſſure. Generally a ſmall, contracted, quick, or ſlow pulſe, affords an unfavourable prognoſtic; while a ſtrong, full, and expanded one, though frequent, gives reaſon for favourable hopes ‡. But if, in the third ſtage of the diſeaſe, it does not return to its natural ſtandard, and continues to be febrile, we may conjecture that a complete criſis will not take place, but that ſome diſtreſſing ſymptom will remain ‖. Barailon obſerves, that if the pulſe, at the turn of the diſeaſe, be more tenſe and frequent in one ſide than in the other, a collection of the morbid matter may be expected to take place ſomewhere in that ſide, namely, a ſwelling, œdema, or abſceſs §. Laſtly, from the doctrine of the Chineſe and Bordeu, concerning the pulſe, the ſame author does not heſitate to affirm, that a *apital* pulſe, as it is called, threatens the ſuperior parts of the body, while

a *ſmall* or *ſerrated* one threatens the inferior parts, with ſome bad conſequence. After theſe obſervations concerning the pulſe, we muſt not omit the ſymptoms which the inſpection of the urine commonly affords. Although in general the inſpection of the urine is conſidered as being doubtful and fallacious, and therefore eſteemed by many to be of ſmall moment, I am of opinion that much light may be ſometimes derived from it, eſpecially when conjoined with other ſymptoms. The ſudden changing of the urine, from being of a citron or fiery red colour, into a watery or pale one, gives reaſon for apprehending that a metaſtaſis will take place ¶. Likewiſe the urine remaining long watery, eſpecially after the eruption takes place, denotes either a dangerous metaſtaſis to the brain, or a freſh eruption of the puſtules being about to take place **. Its becoming white like milk, generally threatens duration of the diſeaſe, ſometimes alſo death ††. Laſtly, its being copious, of a cinnabar colour, and forming a cruſt on the ſides of the chamber-pot, and continuing for ſome days, according to Molinar ‡‡, affords grounds for expecting a favourable event: and the ſame thing is to be ſaid of that which depoſits a copious ſediment ||||.

* L. c. § 121. † L. c. § 159. ‡ Gaſteller, l. c. c. v. || Barailon, l. c. § 159. § Barailon, l. c. ¶ Hamilton, p. 61. Allioni, l. c. § 123. ** Allioni, *ib.* Barailon, l. c. § 157. Vogel, l. c. § 140. †† Allioni, § 123. Vogel, § 140. ‡‡ L. c. p. 128. 132. |||| *Id.* p. 147.

417. A moderate diarrhœa, and the ſtools being not very corrupted, generally afford a favourable prognoſtic *, eſpecially in the ſpecies of the diſeaſe which is combined with a gaſtric and bilious colluvies. Hence, if it ſtops ſpontaneouſly and prematurely, or, in conſequence of aſtringents or opium having been improperly employed, many bad conſequences are threatened. In plethoric patients, and in thoſe who, from the confirmation of the head and neck, have a natural tendency to diſeaſes of the head, Hamilton has obſerved apoplexy ſucceed the ſuppreſſion of the diarrhœa †. But although the looſeneſs has been frequently found to prove ſerviceable, Vogel ‡, on the authority of Biaingan ‖, adviſes us not always to truſt to it. For a ſerous and colliquative one generally proves fatal. Stools tinged with thin blood, and obſerved to contain worms, leave no hopes §. The diarrhœa which ſupervenes in puerperal women, oppoſes the eruption of the puſtules, and the flow of the lochia. Hence Hamilton pronounces it to be a dangerous ſymptom ¶; nay, others look upon it as being a fatal one **. I ſhall ſhortly point out what is denoted by an epiſtaxis taking place. It is conſidered by moſt authors, from the experience they have had of it, as being beneficial, eſpecially by Antonius De Auguſtinis ††, Barald ‡‡, Boyer §§, Vogel ‖‖, Debreſt ¶¶, Plaignin ***, and others. For in conſequence of it they have obſerved the head to

be relieved, the fever diminiſhed, and, laſtly, the moſt violent ſymptoms allayed. But this does not happen when the hemorrhage ariſes from diſſolution of the blood †††, as any one may eaſily perceive. But in order to prove ſerviceable, the diſcharge of blood ought to be conſiderable. It does not prove beneficial, however, although it be conſiderable, when a difficult eruption of very minute puſtules takes place, or when the ſkin becomes only red, attended with very bad nervous affections and ſymptoms. There is danger alſo, when the hemorrhage ſtops after the eruption of the puſtules ‡‡‡. Nor is it ſurpriſing if the trickling of blood from the noſe, at whatever time it happens, is ſaid to be fatal ‖‖‖, as that is a circumſtance in common to all other acute diſeaſes.

* Gaſteller, l. c. Vogel. l. c. § 140. † L. c. p. 61.
‡ Vogel, l. c. ‖ *Act. Helvet.* vol. ii. § Gaſteller, l. c.
¶ L. c. p. 61. ** Barailon, l. c. § 152. †† L. c.
‡‡ L. c. §§ Gaſteller, l. c. p. 342. ‖‖‖ § 140.
¶¶ *Journ. de Méd.* vol. xix. p. 118. *** *Journ. de Méd.* vol. xxiii. p. 338. ††† *Journ. de Méd.* vol. xxxii. p. 419.
‡‡‡ Allioni, l. c. § 133. ‖‖‖‖ *Id. ib.*

418. The drowſineſs is ſafer than the watching; nay, the more diſpoſed the patients are to ſleeping, the more ſucceſsful is their recovery ſaid to be, in the opinion of ſome authors *; but that muſt be received with ſome reſtriction, *i. e.* providing the ſleep be not profound and lethargic, and

the other ſymptoms correſpond with it. Fierce, burning eyes, and red cheeks, denote the approach of phrenitis †. A dry, black tongue, and exceſſive thirſt, are conſidered as bad ſymptoms, unleſs they proceed from an improper method of cure being employed ‡. If the ulcers occaſioned by bliſters dry up prematurely, they imply a ſevere and lingering complaint. But the fetid ſmell and humour proceeding from theſe ulcers indicate nothing bad, according to Barailon ‖. Difficult reſpiration, a faultering voice, tremor of the tongue, but particularly a convulſive dyſpnœa, are ſymptoms indicative of great danger §. Hamilton remarked that the miliary puſtules ſupervening in ſcarlatina, on the red colour diſappearing, were a favourable prognoſtic ¶. A leucophlegmatic ſwelling coming on, particularly in puerperal women, generally foretels an unfavourable event **. Gaſteller affirms, that all is over with the patient if the gums and teeth are incruſted with a chalky, yellow, black matter, or aphthæ of the ſame colour ariſe in the mouth ††. The ſame author likewiſe mentions two fatal ſigns, namely, a ſlight ſore throat, which the attendants and patients themſelves conſider as a catarrhal affection, and a kind of film by which the pellucidity of the cornea is for ſome time obliterated. For he obſerves, that thoſe patients in whom a ſore throat, accompanied with ſome hoarſeneſs, ſupervenes, are approaching faſt to

their end, which generally takes place in twenty-four hours, or, at moſt, in forty-eight. But he conſiders the film obſcuring the pellucidity of the cornea as fatal, although it appears early in the complaint, and goes off within twenty-four hours. He obſerved this ſymptom occur in a patient on the ſecond day of the diſeaſe, and prove fatal eleven days after. Generally, however, it aroſe five, ſix, or eight days before death ‡‡. The convulſions which precede the eruption commonly terminate favourably, or at leaſt are not very dangerous; while thoſe which ſucceed to the eruption, or follow the depreſſion of the puſtules, are fatal ‖‖. Likewiſe a certain indication of death being about to take place, is afforded by univerſal rigor and immobility, attended with languor and fainting §§.

* Hamilton, l. c. p. 61. Vogel, l. c. § 140 † Barailon, l. c. § 153. ‡ *Id. ib.* ‖ *Ib.* § Hamilton, l. c. ¶ *Ib.* p. 62. ** Vogel, l. c. †† L. c. c. v. ‡‡ *Ib.* ‖‖ Allioni, l. c. § 132. Damilani, l. c. p. 93. §§ Damilani, p. 19. 20.

419. The fever in the firſt ſtage of the complaint being violent, when it does not originate from the miliary miaſma, but from other cauſes, does not render the diſeaſe more ſevere, for it is frequently then aggravated by other cauſes. We muſt, therefore, inquire into theſe, in order to be able to pronounce a right judgment *. The de-

lirium, convulſions, nay, the apoplexy itſelf, when they occur at the beginning of the diſeaſe, as being generally concomitant ſymptoms, are more eaſily removed by the phyſician's aid: but during the progreſs, or at the turn of the complaint, when the patient is weaker, and the miliary puſtules,—either in conſequence of cold being caught, or the improper employment of remedies,—are depreſſed, and lurk in the ſyſtem, they prove fatal, becauſe they ariſe from a metaſtaſis towards the brain and nerves having taken place. If the diſeaſe, from being conjoined with milder ſymptoms at firſt, is neglected, and the patient does not follow a proper regimen, or if he is treated with calefacient remedies, which by no means favour a diaphoreſis, it frequently becomes worſe, and threatens death, or at leaſt a lingering illneſs †. Perſons of a mild diſpoſition recover ſooner than thoſe of an iraſcible, diſcontented temper ‡. Allioni ‖ informs us, that robuſt, ſanguine, brawny people, thoſe who have an aſthmatic affection, or who have formerly laboured under herpes, and ſimilar cuticular complaints, gouty perſons, drinkers of wine, and ſuch as have been long affected with depreſſion of ſpirits, run greater riſk: while patients of a ſofter texture, and weak conſtitution, recover beſt. Hence women and children bear the diſeaſe much better than men. Barailon adds, that ſuch as are liable to convulſions and nervous affections, are affected with more ſeverity

and danger §. Gaſteller remarks, that robuſt people, and particularly thoſe with yellow hair, are ſometimes cut off within three or four days, in a ſtate of delirium, or affected with convulſions and hiccup; and he obſerves, that in thoſe perſons, who fall into this diſeaſe under the influence of any of the paſſions, as grief, or are exhauſted with venery, after death ſymptoms of putrid diſſolution of the whole blood generally appear ¶. Hamilton, in fact, had before remarked, that ſuch people are more liable to the miliary diſeaſe, and bear it worſe. But we learn from Allioni, when the diſeaſe is reſolved, if none, or only a ſlight deſquamation of the cuticle follows, while ſome convulſive ſymptoms remain, and prove obſtinate, that the patient will ſuffer a relapſe **.

* Allioni, l. c. § 125. † Hamilton, l. c. c. v. p. 60.
‡ *Id. ib.* p. 61. ‖ Allioni, § 117. § L. c. § 151.
¶ L. c. ** L. c. § 136.

420. On the whole, it is the beſt ſymptom for the patients to retain their ſtrength, to breathe eaſily, to have a moderate fever during the continuance of the diſeaſe, to enjoy ſome reſt or ſleep at night, or during the day-time, to perform all the ſecretions and excretions with freedom, without their proving exceſſive, or debilitating, but gentle and relieving; for the puſtules to break out, attended with a conſtant, ſlight, and univerſal diaphoreſis; for the pulſe to be not very

hard, quick, or irregular, or oppreſſed, or contracted; for the urine to correſpond with the drink taken, attended with ſome concoction, both in point of colour and contents; for all the ſymptoms, as the headach, anxiety, oppreſſion at the cheſt, heat, ſighing, thirſt, &c. not to be very intenſe, or obſtinate; for the affections of the nerves either to be abſent, or not very urgent; for no mental derangement to be preſent, and for want of ſleep, or, on the contrary, profound ſleep, from which the patient cannot be awoke, to be abſent. But Hamilton laid ſo much ſtreſs upon the eaſy reſpiration, that, although it was conjoined with debility, oppreſſion of the cheſt, and ſighing, he conſidered it as a ſign of a favourable event going to take place, provided the eruption then appear attended with a gentle and conſtant diaphoreſis *. Likewiſe Antonius De Auguſtinis obſerved a favourable event follow a copious hemorrhage in the epidemy of Novare, even when the ſweat, during the progreſs and at the height of the complaint, —although it is otherwiſe uſeful and neceſſary,— diſappeared, and did not return again †.

* Chap. v. p. 60. Vogel, l. c. § 140. † L. c. p. 45. 46.

421. But the ſymptoms which are the oppoſite of theſe afford a bad prognoſtic; particularly extreme debility; languor; panting reſpiration; oppreſſion of the breaſt, without a ſubſequent eruption of the puſtules; very ardent fever;

frequent ſighing and fainting; trickling of blood from the noſe; involuntary tears; interruption of the efflorescence; its being of a livid colour; conſtant watching, or profound ſleep; thin, pale, very copious urine, or that which is ſcanty, brown-coloured, or turbid, at the very beginning of the diſeaſe; delirium; phrenitis; ſubſultus tendinum; convulſions; loſs of voice; tremor of the tongue, or indiſtinct ſpeech; palſy of the limbs; apoplexy; an anginous ſoreneſs of the throat; too profuſe, premature, or cold ſweats; peripneumony; a ſenſe of ſuffocation; a very diſtreſſing cough; weight of the præcordia, and hiccup; violent, frequent, and difficult vomiting of a crude, ſerous, or bilious matter; diſtenſion of the hypochondres; a tympanitic ſwelling of the belly, painful to the touch; a variable, irregular, ſmall, ſerrated pulſe, growing gradually weaker, or, from being hard, becoming ſoft, without any diminution of the diſeaſe; acrid heat; dry ſkin; languid eyes, and almoſt cloſed, or half-open during ſleeping; or, on the other hand, rolling, and, as it were, ſparkling; their being fixed on a ſpot; dulneſs of ſight; blindneſs; inſenſibility; ſtupor; blackneſs of the teeth and lips; a fetid breath; dejection and deſpair; coldneſs of the extremities; ſerous, oily ſtools, like melted fat; or unexpected looſeneſs, attended with worms and loſs of ſtrength, which Molinar obſerved to be very fatal *. To theſe

ſymptoms Antonius De Auguſtinis adds, as one full of danger, an uneaſy itching all over the hairy ſcalp, and at the point of the noſe †. The more of thoſe ſymptoms occur conjointly, the greater is the danger, and the more certain are we that death will happen; or *vice verſa*. For it is not neceſſary that they ſhould all appear together, it being ſufficient that ſome of them are preſent. Nor muſt we forget the particular obſervations already laid down for directing our judgment in pronouncing the prognoſis. Barald informs us, that in the epidemy which prevailed at Corregio, the hiccup, the black or yellow matter on the teeth and lips, the delirium, convulſions, and catching of the bed-cloaths, which are generally fatal ſymptoms, did not prove ſo in all the patients whom he attended ‡.

* L. c. p. 116. † L. c. p. 44. 45. ‡ L. c. p. 78.

THE CAUSES.

422. AUTHORS do not ſeem to be agreed concerning the proximate, or rather material cauſe, as it is called, of this diſeaſe. For different writers have propoſed different ones, according to the opinions they have adopted concerning the origin and nature of the diſeaſe itſelf. Some alſo are not altogether conſiſtent with themſelves, being doubtful whether to acknowledge the exiſtence of one or more, and

what one ſhould be conſidered as more frequent and probable than the others. Hamilton, to whom the firſt place is due, taxes abundance and acidity of the ſerous fluid, being induced to do ſo from having obſerved that pale and weak people in particular, and thoſe whoſe blood abounds with ſerum, are more liable to this complaint, and that the ſweat proceeding from their bodies has an acid ſmell. And he proves the truth of his opinion by a good many ſucceſsful cures, which he performed with antacid, abſorbent, and gently-diaphoretic remedies. Fordyce, whom Planchon quotes *, taught by an experience of ſixteen years, confirms the truth of all that had been advanced by his predeceſſor Hamilton concerning the miliary eruption, and adopts the cauſe propoſed by him. Likewiſe Chambon de Montaux †, one of the members of the Royal Medical Society of Paris, who has very lately written on the ſubject, notwithſtanding of all that had been written by others in oppoſition to the opinion, does not heſitate to adhere to Hamilton, thinking that the cauſe propoſed by him had been ſo clearly demonſtrated, as not to leave a ſhadow of doubt concerning the truth of it: and he adds, that ſome, not contented with the arguments of Hamilton, by way of a teſt, have applied blue paper to the ſkin of the patients, and have obſerved its colour to be changed into a red, by which it is clearly demonſtra-

ted, that the ſweat in the miliary diſeaſe manifeſts the acidity of the ſerous fluid.

* *Diſſert. ſur la Fievr. Miliar. di Femm. en couche*, § 3.
† *Malad. des Femm.* T. i. c. viii. p. 470.

423. Nor does Hoffman differ much from Hamilton; for he ſays that the matter, which is the *proximate cauſe* of the miliary diſeaſe, is contained in *corrupted lymph of a ſpecific nature*, and that it is forced by nature to the ſurface *from the internal parts, principally the nervous ones*, under the form of the miliary eruption, both white and red *. But as he ſuppoſes theſe miliary puſtules to be intirely of a double kind, namely, red, and white, he is obliged to admit that the nature, or degeneracy, of the fluid calculated for the production of each is of a double kind; namely, one, *acido-vappid, of a more fixed kind;* another, *ſulphureo-fetid, of a more alkaline and volatile diſpoſition.* He ſuppoſes that the pellucid, inſipid, gelatinous fluid, which we call the lymph, is prone to the former; and that the blood, and its ſerum, in which there is preſent a great quantity of ſulphur and ſalt, is diſpoſed to the latter. He is of opinion, therefore, that the white miliary eruption is occaſioned by corrupted lymph, and that the red one proceeds from the blood and its ſerum. Nor is his opinion unſupported by probability; for, as he obſerves, there are many proofs that the lymph is in a ſtate of acidity in the white miliary eruption, namely, the great

ſeparation of the watery part of the blood from the general maſs, by means of the *ſweats*, *copious*, *thin urine*, ſometimes by the *ptyaliſm*, or *watery ſtools*, which take place, as being the effect of the acidity coagulating the blood, and expreſſing the aqueous part; the injury occaſioned by acids of all kinds, and the copious uſe of refrigerants in the treatment of the diſeaſe; the vaſt relief obtained from antacids, and bland volatile remedies; the preceding abuſe of acid and aceſcent things; a preceding indolent way of life; and, laſtly, the clotted blood found in the large veſſels and heart of thoſe who have died of the white miliary eruption, evincing the preſence of a coagulating acid †. But he conjectures, that in the red ſpecies *acrid ſalino-ſulphureous ſerum* is the hurtful cauſe, from there being preſent in it much greater itching and heat of the ſkin, than what takes place in the white eruption; and alſo from the circumſtance, that thoſe perſons are more liable to the complaint, who labour under abundance of impure blood, as ſcorbutic people, ſuch as are advanced in life, or in whom the uſual evacuations of blood do not occur, thoſe who are accuſtomed to ſalted meat and vinous liquors, and who are of a lax habit of body, and do not exerciſe themſelves ſufficiently,—from cauſes retaining the acrid, ſerous colluvies, which ought to have paſſed through the pores of the ſkin, as cold air, cold drink taken when the body is covered with

ſweat, ſudden terror, and the like; from the utility of mucilaginous and correcting remedies; and, laſtly, from the heat and itching being augmented by calefacient and volatile remedies, and the heating regimen ‡.

* *Hoffm. Med. Rat. Syſt.* T. 4. P. 1. c. ix. § i. and vii. † § viii. ‡ § ix.

424. The majority at leaſt of other writers have adopted either Hamilton's or Hoffman's ſentiments. They at any rate agree in accuſing the lymphatic and ſerous fluid of being corrupted, or impure, and acrid. Vogel, without heſitation, aſcribes every kind of miliary eruption, whether primary, or ſymptomatic, or ſecondary, both red and white, to *a peculiar and ſpontaneous vitiation of the lymph, which, however, can ſcarcely be aſcertained*; although he does pretend to deny, *that ſometimes, in conſequence of exceſſive heat of the chamber and bed, and the liberal employment of cordial remedies, it may be forced to appear in acute fever, although it would otherwiſe have lain dormant* *. Joubert likewiſe taxes the ſerum, but takes care not to define the peculiar nature of its vitiation. For he ſuppoſes, from comparing ſeveral obſervations, that the miliary eruption appears to be uniformly produced by the ſerum of the blood being altered and vitiated in various ways; and he thinks that this opinion is confirmed, 1. by the uſual ſubjects of the diſeaſe being young men of the ſanguine temperament, who obſerve no particular regimen, and

are addicted to all the vices common to youth, indulging in indolence, drinking to excefs, fleeping little, and being frequently agitated by various paffions; 2. by puerperal women in particular being feized with the difeafe, in confequence of the fuppreffion of the lochia, or the retiring of the milk; 3. by the eruption appearing more frequently after a cold, damp winter, by which the perfpiration is fuppreffed, that is, at the commencement of the fpring, when the vitiated ferum feparates, and is difpofed for excretion. And hence, he fuppofes, it happens, that the eruption is fo frequently conjoined with catarrhal and rheumatic affections. From the ferum, therefore, being thus rendered impure and vitiated, and carried to the exhalants, he infers, that they are irritated and corrugated, and that its ftagnation occafions the miliary puftules †.

* L. c. § 140. † *Hift. de la Soc. Roy. de Méd. an.* 1776, p. 529. *Mem. fur les Fievr. Exanth.*

425. The *ferous* and *lymphatic* part of the blood is likewife fuppofed to be corrupted, and, as it were, rendered *cauftic* in this difeafe, by Planchon *, who conceives that it is depraved in this manner by the perfpiration of the fkin being checked, which is its moft common and frequent caufe. The miliary matter, therefore, as he fuppofes, is not of an inflammatory, but of a putrid and corruptive difpofition. In the cafe of puer-

peral women, however, inſtead of retention of the perſpiration, he accuſes the lacteal fluid, and ſuppoſes that it is frequently more or leſs vitiated, from the lochia being checked, and flowing back, and that it is ſometimes brought to ſuch a pitch of putrefaction, as to derange the fluids and whole animal economy. Nor was Gaſteller of a different opinion †; for he conſiders retention and acrimony of the perſpiration as the principal cauſe of the corruption of the lymph, blood, and bile. But he denies that the matter occaſioning the diſeaſe is of an acid nature, although the ſweats have an acid ſmell. Beſides retention of the perſpiration, however, he is obliged to confeſs, that noxious miaſmata, proceeding from impure, damp, or otherwiſe infected air, are ſometimes introduced into the blood, which render the former cauſe worſe, and aggravate the diſeaſe, as if theſe laſt were not ſufficient of themſelves to excite it.

* *Diſſ. ſur la Fievr. des Femm. en couch.* § 9.

† L. c. p. 70. to 74.

426. Very different ſentiments are entertained by other authors of no leſs eminence, among whom I may mention the diſtinguiſhed names of Allioni, Tiſſot, Störck, Collin, and Molinar *, to which may be added that of Quarin, who does not deny that this eruption proceeds ſometimes from an *epidemic conſtitution*, and *ſtimulus contained in the air*; which laſt, with Van Swie-

ten, he ſeems to allow may poſſibly exiſt †. For theſe authors contend, that the miliary diſeaſe is produced and cheriſhed by a *peculiar miaſma*, or *poiſon*, which is ſuppoſed in like manner to give riſe to ſmall-pox, and that by it is occaſioned a fever *ſui generis*, which no art can imitate, or produce. And this opinion is conſidered by Barald ‡, Antonius De Auguſtinis ‖, and Felix Aſtius §, to whoſe opinion I myſelf accede, as being the moſt probable. For the more ſerous diatheſis of the blood, and the aceſcent, or acid degeneracy of the ſerum, to which Hamilton aſcribed the origin of the miliary eruption, can ſcarce be ſuppoſed, of itſelf, to afford the proximate cauſe of the diſeaſe; although I do not deny that weak, pale people are more liable to this kind of eruption, and that their ſweat, when they are affected with this diſeaſe, has an acid ſmell, and is really acid; but it is to be obſerved alſo, that they more readily recover, contrary to what ought to follow if a vitiated ſtate of the lymph or ſerum occaſioned it, as in theſe people, in particular, there is an abundance of both. But there are many proofs of both theſe cauſes very frequently concurring in cachectic people, in chlorotic girls, and in rickety children, in whom there is an abundance of ſerous fluid, generally accompanied with ſpontaneous acidity, and yet we do not frequently obſerve this eruption occur-

ring in ſuch perſons, as we ſhould otherwiſe do were it produced by theſe cauſes alone. Likewiſe perſons of the ſanguine temperament, and of a good habit of body,—in whom neither the ſerous part of the blood can be ſaid to be exceſſive, nor ſpontaneous acidity to be preſent,—are liable to the complaint. Nor can we give our aſſent to the opinion of Hoffman, who affirms that the *white* ſpecies of the complaint proceeds from acid lymph, and the *red* from the blood and its ſerum abounding with the ſalt, ſulphureous, and alkaleſcent principles. For not only do both the *white* and *red* ſpecies occaſionally appear in the ſame perſon, but it alſo frequently happens, that that which is originally white is changed into the red, and the red again into the white, which I have already noticed (388.), ſo that the colour cannot denote a difference between their cauſes, but is more probably to be derived only from the patient's temperament, habit, age, the method of cure employed, and other circumſtances. But were retention of the perſpirable matter the real proximate cauſe of the miliary eruption, as Planchon and Gaſteller in particular imagine, how comes it, when this is the commoneſt cauſe, that the miliary eruption either occurs very rarely, or only appears in ſome countries and places, or during certain ſtates of the air, and prevails then univerſally? Why do theſe very writers, as if diſtruſting their own

theory, laying aſide this cauſe, betake themſelves at one time to ſuppreſſion of the lochia, at another time to retention of the lacteal fluid, ſometimes to the noxious effluvia of marſhes, and other miaſmata tranſmitted into the body from the air?

* *De Miliar. Exanth. Indol. et Tractat.* p. 33. † *Meth. Med. Febr.* c. vi. p. 78. 79. ‡ L. c. p. 56. || L. c. p. 27. to 29. § *Terz. an. Med. Mantouan.* p. 107.

427. Beſides, the miliary diſeaſe is ſometimes epidemic, or endemic, ſparing nobody, of whatever conſtitution, temperament, age, or manner of living. It is frequently communicated by contagion, infecting ſtout people, accuſtomed to much exerciſe, and in perfect health, in all of them going through the ſame courſe, and giving riſe to exactly the ſame phenomena, chiefly the nervous ſymptoms, and, laſtly, occaſioning the miliary puſtules after an uniform and invariable manner. The eruption itſelf is ſo eſſential, peculiar, and inſeparable, that it cannot by any means be conſidered as acceſſory, accidental, or factitious, nor can it by any caution be prevented. For Collin*, Tiſſot†, Haller, Crantz‡, and other moſt reſpectable phyſicians, mention their never having ſeen it occaſioned by the heating regimen, or bezoartics, or ſudorifics, or ſpirituous remedies ||. Molinar aſſerts, that he frequently ſaw the miliary eruption ſupervene in his patients,

although they had been treated with refrigerant and antiphlogiſtic remedies, and were conſtantly expoſed to the cold air §. This ſame fact is confirmed by Quarin; who obſerves, "In the year 1758, almoſt all ſuch as laboured under acute fever were affected with this eruption, although the *primæ viæ* had been purged, and the patients were not loaded with bed-cloaths, or haraſſed with calefacient remedies ¶." It has likewiſe been repeatedly obſerved by myſelf and others, biaſſed in favour of no particular opinion. Almoſt daily experience convinces practitioners that ſometimes it can by no means be avoided, for it occaſionally eludes both the moſt cooling regimen that can be employed, and the coldeſt drink, as well as bleeding, repeated even ſeven or nine times, together with vomiting, purging, and the repeated employment of injections. For it ſcarcely ever happens, that, in conſequence of employing theſe remedies at the beginning of the complaint, the eruption does not ultimately appear on the ſurface, which is its natural tendency. Which being the caſe, why may there not exiſt in the miliary diſeaſe a peculiar virus, or miaſma, ſuch as is univerſally acknowledged to take place in ſmall-pox and meaſles? By it would be explained the *peculiar unaccountable vitiation of the lymph*, the preſence of which Vogel ſuſpected (424.); or that other indefinite vitiation and manifold depravation of the ſerum, which, as I have

already ſaid, Joubert ſuppoſed, from a variety of obſervations collected together, takes place in this diſeaſe. But if this proximate cauſe is admitted, it follows, that the other ones, which are adduced by writers (424. 425.), muſt be conſidered only as remote ones, both prediſpoſing and exciting.

* L. c. p. 49. † *Lettr. á* M. Hirtzel, p. 51. 52. 61. 64. ‡ Collin, p. 53.

‖ Quarin adduces the teſtimony of Baldinger, who remarks, that the miliary eruption rarely occurred in the King of Pruſſia's Army, although the patients had been haraſſed both with the heat of the bed, and the employment of heating remedies.

§ L. c. p. 33. ¶ L. c. p. 79.

428. They tell us, that this miaſma (427.) is thin, acrid, and principally hoſtile to the nerves; and, in fact, the phenomena themſelves declare that this is the caſe. Its *tenuity* is manifeſted by its being eaſily reſolved into halitus, and tranſmitted into ſound bodies in the form of vapour, and alſo received into the ſyſtem by inſpiration. Nor is it any objection to this, that, when carried to the ſkin, as Collin objects to Allioni, it is detained under the epidermis. For that does not always happen; eſpecially when it arrives at the ſurface free, and as it were ſolitary: in which caſe it has already appeared, that it ſometimes eſcapes without delay along with the inſenſible perſpiration. But when it ſtops there, occaſioning the

puſtules, that is not owing to its ſluggiſhneſs and denſity, but the tenacity of the fluids wit which it is blended. Nor muſt it be ſuppoſed that it always paſſes off through the minute exhalant veſſels; for it is probable that it ſometimes exudes through the inorganic pores, and is accumulated under the epidermis. No is it irrational to ſuppoſe, that it ſometimes reaches the ſurface along with the lymph, which moiſtens the nerves, and is contained in their ſheaths, and that it diſtils from the points of the nerves, which there lay aſide their vaginal covering, under the epidermis, raiſing it into puſtules. But that it is *acrid*, appears from the circumſtance of its not only exciting fever, and that frequently of an acute and very ardent kind, but alſo inflammation, pricking, and conſiderable itching, and, laſtly, looſening the cuticle, in conſequence of which a deſquamation of it takes place. Moreover, that it is extremely *inimical* to the nerves, is evident from its attacking the head particularly, and inducing watching, or *coma vigil*; from its occaſioning cramps, tremors, ſubſultus tendinum, convulſive dyſpnœa, hiccup, convulſions, epileptic fits, and ſimilar nervous affections. Sometimes, examining its properties more narrowly, add that it is *ſeptic*, on account of its deranging the natural craſis of the blood, ſeparating its conſtituent parts, and ejecting the ſerous fluid from the blood, in ſuch a manner

as to make it flow off abundantly in all directions through the relaxed veſſels of the kidneys and ſkin, and prediſpoſing the fluids to putrefaction: which they contend ſufficiently appears, not only from the putrid halitus iſſuing from the patients, but alſo from the rapid putrefaction which takes place immediately after death; and they are ſo far from aſcribing to it an acid diſpoſition, from the ſweat having an acid ſmell, or having acquired actual acidity, that they are rather of opinion, that corruption of the lymph and ſerum may be inferred from it. For they ſay, that the lymph and other alible fluids become acid, and have an acid ſmell before they putrefy. But in my opinion we are not entitled to infer, that that miaſma, although it were poſſeſſed of a ſeptic property, is itſelf of a putrid nature. For it does not follow, that that which may prediſpoſe the fluids of the living body to putrefaction, is itſelf putrid: a fact which is well known to ſuch as are acquainted with phyſiology and pathology. It would be well that it were of a putrid nature, for it might be corrected, rendered inert, or almoſt deſtroyed by acids and antiſeptics, before occaſioning any injury to the ſyſtem; which is by no means the caſe, as repeated experience has proven. Nor are its effects ſuch as clearly to demonſtrate its ſeptic power. For very frequently the blood which is drawn ſhews an inflammatory diatheſis, which is confirmed by the ardent fever,

ſtrong, hard pulſe, and the peculiar inflammations of the viſcera, which in the firſt, and ſometimes alſo in the ſecond, ſtage of the diſeaſe, require repeated bleedings, which doubtleſs by no means would be admiſſible in a putrid diſſolution of the fluids. Hence Allioni was led to ſuppoſe, that this miaſma poſſeſſes the power of congealing the blood and other fluids. But the rapid putrefaction which takes place after death, rather points out the violence and effects of the diſeaſe, than the peculiar nature of the cauſe from which it proceeds. A perſon, therefore, would ſteer a ſafer courſe in pronouncing the miliary miaſma to be not yet ſufficiently known, and to be intirely different from all others, conſtituting a peculiar genus, which is to be recogniſed only by the phenomena which it exhibits.

429. But although approved writers almoſt unanimouſly recogniſe ſuch a miaſma (428.); with reſpect, however, to its origin, they either paſs it over in ſilence, or do not explain it ſufficiently. It therefore remains for us to inquire, whether it ariſes in the ſyſtem ſpontaneouſly, or, being generated elſewhere, paſſes into it. It is doubtleſs an inveſtigation attended with many difficulties, to do juſtice to which I confeſs myſelf intirely inadequate. But if there be any room for conjecture, I ſhould not conſider it as abſurd to ſuppoſe that it may originate in both ways. For as the places in which the miliary

diſeaſe prevails endemically are ſurrounded with ſtagnant waters, and a marſhy ſoil, and are conſequently immerſed, as it were, in air perpetually abounding with various kinds of effluvia and exhalations, why may not that miaſma be derived from theſe noxious emanations? About thirty years ago, at Mantua, where for ſome time the miliary diſeaſe had begun to prevail ſporadically, it happened to prevail epidemically, attacking intire families, one after another, almoſt uniformly proving fatal. Such was its violence and deſtructive tendency. There was no other manifeſt cauſe to which this unuſual and terrible devaſtation could be aſcribed, than the recent cleanſing of the ditches, with which the city is ſurrounded, and the tranſporting of the putrid mud behind the walls to form the mound; for, in conſequence of it, the poiſonous effluvia being raiſed by the heat of the ſun, had infected the air all over the city. That this was really the origin of the unuſual increaſe and diffuſion of the miliary poiſon, afterwards appeared, from the circumſtance, that after two or three years had elapſed, and the cauſes above mentioned had been gradually avoided, the force and frequency of the diſeaſe were ſo much diminiſhed, that at preſent it is only obſerved ſporadically, and generally is of a mild diſpoſition in that city *. Moreover, if all the circumſtances preceding the appearance of the epidemic miliary diſeaſe any where are accurately inveſtigated, ſomething will always be found

which has been communicated to the air by ſtagnant waters or inundations, or by the beds of rivers, or the bottoms of pools being laid open, and ina ſtate of fermentation, or by earthquakes, or the expoſing of caves or ſewers, or by the maceration of lint or hemp in the neighbourhood; or by the ſouth winds, and thoſe blowing from unhealthy diſtricts, or by unuſual phenomena in the air; or which corrupted grain, herbs, wine, or bread have occaſioned. All which facts, if I miſtake not, ſeem to ſhew that the miliary poiſon very frequently proceeds from external cauſes, and is introduced into our bodies. For there is nothing to prevent ſuch cauſes from ariſing in our own bodies, which may ſo vitiate the colluvies in the *primæ viæ*, fluids, bile, and other humours, as to make them perfectly acquire the nature of the miliary miaſma, and occaſion the miliary diſeaſe, particularly the ſporadic ſpecies, which may be more or leſs readily communicated by means of the ſeeds of the diſeaſe and poiſonous halitus emanating from the body. And I am of opinion, that this miliary virus principally takes place in the febrile diſeaſe. But whether that ought to be admitted in the ſpecies of the diſeaſe unaccompanied with fever, and particularly in that with which children and young people are attacked in the ſummer-time (384.), or whether we ought rather to accuſe the heat and acrimony of the blood only, I ſhall not take upon me to

determine, unleſs it be ſuppoſed to be ſo mild as to differ widely from the diſpoſition of the real poiſon, in the ſame manner as the variolous virus, which in the ſpurious ſmall-pox is ſo mild, that it can ſcarcely be compared with that which occaſions the genuine ſmall-pox.

* Aſti, *Terz. Ann. Med. Mantouan.* p. 83.

430. Hence it follows, that the other cauſes enumerated by authors, are only capable of producing this diſeaſe remotely, either like *occaſional* ones, exciting the miaſma to action, or like *predispoſing* ones, preparing the body for its production, or reception. Such, to omit nothing, beſides thoſe already enumerated, are food conſiſting of farinaceous, ſweet, fermenting things, and ripe fruits; ſcanty, thick, watery, impure drink; damp, bad air, pregnant with heterogeneous principles, or otherwiſe vitiated; long continued coſtiveneſs; neglecting to keep up the perſpiration; bad fluids; the ſuppreſſion or omiſſion of critical or cuſtomary evacuations; profuſe bleeding, followed by loſs of ſtrength; the paſſions, particularly violent anger and grief, and long continued anxiety; watching; intenſe ſtudy; or an indolent ſedentary life; exceſſive labour; want; a weak, lax habit of body; a ſanguine or phlegmatic temperament; according to Hoffman, childhood or old age rather than the prime of life; but according to Allioni †, youth rather than childhood or old age, and particu-

larly the ſanguine temperament, although every temperament is conſidered as liable to it; the female ſex more than the male; child-birth; the violent extraction of the placenta; retention of the lochia; a colluvies in the *primæ viæ*; the air of the bed-chamber being too warm, or not renewed, and other things in any manner occaſioning plethora, acrimony, atony, debility, and obſtruction. Likewiſe long continuance of the ſouth winds, and variableneſs of the ſeaſons and weather, particularly in the winter-time, have been ſometimes obſerved to precede the epidemic diſeaſe. Allioni obſerves ‡: "As the ſummer of the year 1733 had been very warm and dry, and likewiſe the autumn and winter unuſually warm, in the year 1734, Turin, and almoſt the whole of Piedmont, were affected with a very violent miliary and petechial epidemy. Grunwald mentions that the ſame ſtate of the air that year cauſed the prevalence of the miliary diſeaſe among the inhabitants of the higheſt tops of the Alps." And he is diſpoſed to believe that the immoderate employment of calefacients in fevers, has a tendency this way. But concerning the ſeaſons, he is of opinion, that the ſpring is more favourable to the production of the diſeaſe, than the autumn, and that the ſummer ‖ and depth of winter are leaſt of all diſpoſed to generate it. He grants, however, that damp air and changeable weather, or very changeable

weather alone§, is more diſpoſed to generate it, than pure air, and conſtant weather; but that damp air, which, however, is conſtant, unleſs ſome other cauſe be preſent, renders the diſeaſe milder: and, on the other hand, that warm weather oppoſes its generation¶. By theſe and the like cauſes, he ſuppoſes that the poiſon is excited to action, or that ſuch a change is induced in our bodies as renders them fit for being acted on.

* L. c. ſect. 1. cap. ix. § x. † L. c. § 61. ‡ L. c. § 64.

‖ With reſpect to the ſummer-ſeaſon being leaſt diſpoſed to favour the production of the miliary diſeaſe, we muſt except the benign ſpecies of the complaint, which is unaccompanied with fever, and occurs in children and young people moſt frequently in the ſummer-time.

§ L. c. § 60. ¶ *Ibid.*

THE CURE.

431. As no antidote has hitherto been found for ſpecifically correcting, neutraliſing, or altogether deſtroying the miliary miaſma, and its particular nature is not ſufficiently known to enable us to oppoſe it with certainty; it conſequently follows, that no method of treatment ſeems better adapted for curing this diſeaſe, than that which has already been propoſed in general in the cure of the other exanthemata, and particularly that of ſmall-pox, to which it has a great affinity. We muſt therefore, as far as poſſible,

blunt and correct the acrimony of the miaſma by general means, aſſiſting the ſeparation of it from the ſound fluids; promote its excretion, and therefore open all the organic excretories of the body, particularly the cutaneous ones through which it is eliminated, that it may the more readily eſcape in all directions; and, laſtly, we muſt alleviate the urgent ſymptoms. But the powers and motions of nature muſt always be regulated in ſuch a manner, as neither to exceed nor fall ſhort of the proper mean. In the ſpccies without fever, as alſo in the benign, pure, and ſimple kind, nature alone is ſufficient; nor, in general, is any other aſſiſtance required, than attention to a proper regimen, which, as being in common to every ſpecies of the complaint, will come in more properly at the end. But in the malignant or diſguiſed diſeaſe, or that which is complicated, nature alone being incapable of overcoming the diſeaſe, the aid of art muſt be called in. On the whole, if the fever is moderate, as I have repeatedly inculcated, it ought neither to be excited nor diminiſhed. If it is leſs than proper, and in a meaſure torpid, while the other ſymptoms correſpond with it, that is to ſay, if all the vital functions are in a ſtate of languor, it ought to be increaſed with caution by means of ſome ſtimulus. On the other hand, if it is exceſſive, it ought to be checked until it

is brought down to the proper medium. The eruption muſt not be forced out too ſtudiouſly, but rather kept up. The warm regimen, cordials, and alexipharmacs, in general prove hurtful. Bland diaphoretics, however, by which the perſpiration and eruption of the puſtules are gently promoted, are not to be intirely rejected, particularly when conjoined with diluents; and if conſiderable heat is preſent, they may be corrected with nitre *.

* Ludwig, l. c. § 221.

432. But the practitioner is not a little puzzled about the proper employment of the remedies which fulfil the various indications. For experience has ſhewn, that all patients do not receive relief from the ſame remedies, but require different ones, becauſe it has been found that their effects vary much, on account of which there is a great diſpute among phyſicians concerning the employment of them *. This holds particularly with reſpect to bleeding, which ſome conſider as being generally ſuperfluous, or hurtful in this diſeaſe, while others conſider it as not only uſeful, but almoſt indiſpenſable. Without doubt, the miliary eruption of itſelf does not require it, as Hamilton †, Collin ‡, and others have very properly remarked, particularly the white and watery, or cryſtalline ſpecies, unleſs ſome urgent ſymptom be preſent. It is with good reaſon,

therefore, that Hoffman ‖ and Gaſteller § adviſe it to be employed ſeldom, and with the utmoſt caution. The latter alſo adds, that he only employed it when inflammatory ſymptoms were preſent, and that his patients never derived much advantage from it; probably, as he ſuſpects, on account of their having been affected with a ſcorbutic taint. Meade, although at firſt he thinks that blood ſhould be let, provided the ſtrength admits it, if the body be covered with ſweat, he abſtains from bleeding, or puts it off for one or two days, or until a more convenient opportunity, and remarks, that the ſmaller the quantity of blood taken is, the ſafer in general is the termination of the diſeaſe; for he obſerves, that when the ſtrength fails towards the end of the diſeaſe, the puſtules ſtrike in, and the patient dies ¶. It is certain, that when the ſtrength fails, and the face becomes pale; when the pulſe is weak, ſmall, depreſſed, and ſoft; when frequent faintings occur; when the body is weak, and there is not a ſufficient quantity of blood, as chiefly happens in that ſpecies in which a white, cryſtalline, watery, and pellucid eruption takes place, all theſe ſymptoms contra-indicate every kind of profuſion of blood. There is therefore very ſeldom occaſion for bleeding in this caſe, unleſs plethora, or the ſuppreſſion of ſome uſual excretion, or ſome other ſymptom indicating it, as aſthma, pleuriſy, and the like, are combined

with it, and oblige us to employ it at the very beginning of the diſeaſe.

* Vogel, l. c. § 141. † *De Febr. Miliar.* c. 6. p. 65. ‡ L. c. p. 71. ‖ *In Cautel.* § vi. § L. c. p. 361. ¶ *Monit. et Præcep. Med.* ſect. iv. p. 13. 14.

433. Nevertheleſs, the miliary virus,—particularly in people of the ſanguine temperament, in ſuch as are plethoric and robuſt, and have a good habit of body, and at certain times of the year, as well as during particular ſtates of the weather,—is ſometimes of ſuch a nature, that by irritating in a particular manner the heart, veſſels, and nerves, either in greater quantity, or with greater acrimony, it excites a more violent and acute fever. Whence Allioni thought, that it poſſeſſed the power of coagulating the blood, and inflaming the extremities of the minute veſſels, and therefore more frequently gave reaſon for letting blood than is neceſſary in the petechial diſeaſe. Be that as it may, no one can deny this tendency of the diſeaſe to inflammation, if he be at all converſant with the practice of medicine. For in the epidemy which prevailed in the year 1755 at Novare, ſo great was the inflammatory diatheſis, that ſcarcely any perſon affected with the miliary diſeaſe recovered, until liberal bleeding had been frequently employed *. At Corregio alſo, although the blood was not ſo inflammatory as at Novare, for it generally appeared denſe and coagulated, but of a ſhining red colour, and con-

tained much ſerum; when certain indications were preſent, or when the fever was very violent, or the heat diſtreſſing, Barald did not abſtain from bleeding. If, therefore, very violent fever, and a great, ſtrong, hard pulſe; burning heat, and thirſt, and fluſhed face; anxious reſpiration; headach; the patient's temperament, habit, age, and the like,—although not all together, at leaſt ſeveral of them,—indicate the propriety of bleeding, blood is drawn with ſafety; nay, it really ought to be drawn before the eruption appears, and ſometimes not once only, but repeatedly, that is to ſay, ſo long as the ſymptoms continue, particularly the great, hard, vibrating pulſe: and it is better, in Allioni's opinion, to exceed a little in letting blood, than to refrain from it altogether. For in this manner the diſeaſe is in a manner curbed, and the more dangerous ſymptoms, which to a certainty would afterwards appear, are prevented. And it is much more requiſite in the *diſguiſed* miliary diſeaſe (401.), and in the *complicated* ſpecies (405.), as in them the diſeaſes under the maſk of which it lurks, or with which it is combined, are generally of ſuch a nature as to require and bear repeated bleeding, and the more eaſily, if any manifeſt inflammation, as of the lungs, fauces, uterus, or any other of the viſcera, or ſuppreſſion of the menſes, lochia, or hemorrhoidal flux, be preſent, or its approach is apprehended. Molinar, from

repeated trials, aſcertained, that in puerperal women affected with this diſeaſe, on the lochia ſtopping, the blood was always advantageouſly drawn, both from the foot and arm. In which caſe, if the languor of the pulſe and ſtrength deters us from opening a vein, and, on the other hand, the apprehenſion of hyſteritis, from retention of the lochia, requires immediate aſſiſtance; leeches applied to the lips of the vulva have generally afforded almoſt certain relief, without any loſs of ſtrength. But when no indication for bleeding is preſent, while the patient is diſtreſſed with anxiety, accompanied with a quick pulſe and headach, in that caſe antiphlogiſtic remedies are generally recommended, and, among theſe, a chief rank is ſaid to be held by the decoction of marſh-mallow root, with oxymel and diaphoretic antimony. For by means of them, not only is the lingering eruption accelerated, which generally makes all the other ſymptoms diſappear, but it is likewiſe kept up well to the end of the diſeaſe ‡.

* *De Auguſt.* l. c. † L. c. § 28. 29. p. 61. ‡ Collin, p. 72. 73.

434. But when the puſtules make their appearance, in the ſame manner as takes place in all the other exanthemata, phyſicians are more doubtful about letting blood in this diſeaſe. For they are afraid of their ſubſiding, or ſtriking in,

in conſequence of it; as it has been proven by experiment, that if any of the viſcera is ſeverely inflamed, and a very violent fever is preſent, copious bleeding may be attempted, without the eruption ſubſiding, or ſtriking in *. For ſuch is the force of the circulation which ſtill remains after bleeding, that the fluids do not ceaſe to be propelled to the ſurface. Blood may be alſo drawn during the eruption, when, beſides very acute fever, the belly becomes tenſe; the urine is rendered thin, watery, or pale; when a ſharp pain, and burning heat, are felt in the uterus; when the lochia ſtop; when the head grows heavy; when the pulſe is ſuppreſſed, or beats with great violence; when the cheſt is oppreſſed, and the reſpiration interrupted, &c. †. Allioni very properly remarks, that the violence of the fever, the delirium, and other ſymptoms in this ſecond ſtage, can hardly be allayed by bleeding, nay, that even convulſions are frequently occaſioned by it, and the patient's death accelerated ‡; as I myſelf have more than once obſerved, eſpecially in thoſe patients from whom, before the eruption, blood had been frequently taken. But if the inflammation of any viſcus requires immediate relief,—although the extreme debility may excite the apprehenſion, that bleeding would completely reduce the ſtrength,—it will be proper then to let blood, though ſparingly, and in ſome meaſure at intervals ‖.

* Collin, l. c. p. 62. Molinar, l. c. † Collin, p. 71.
‡ L. c. § 141. || Collin, *ib.*

435. There is leſs controverſy concerning the application of cupping-glaſſes. Moſt authors approve of applying them to the back and limbs, both before and after the eruption, ſuppoſing, that by means of them the miliary poiſon is called to the ſurface, that revulſion from the head is occaſioned, and the headach, delirium, and coma, very much relieved. Damilani, however, found them prove hurtful *. Barald agrees in opinion with him, ſeriouſly affirming that the eruption of the puſtules is retarded, or even repreſſed by them †. I confeſs that I ſometimes have been diſpoſed to doubt that ſo a high a value was to be ſet upon them, as other authors generally believe. For it did not appear to me to be poſſible, that cupping-glaſſes, with however much caution, could be applied to the naked body, without the ſkin, which in the miliary diſeaſe is much more ſenſible, in conſequence of the application of the cold air, becoming corrugated and contracted. I ſay nothing of the irritation which they occaſion to the ſkin, nor concerning the obſtruction of the cutaneous veſſels, which immediately follows the diminiſhed weight and elaſticity of the air. In conſequence of which I was ſomewhat fearful that they would be apt to check the eruption of the miaſma about to take

place, or repel it after it had broken out. I by no means, however, intirely reject the employment of them, as I find them approven of in conſequence of the experience which others have had of them. Allioni ‡, from his experience, does not altogether oppoſe them, particularly if ſcarification is employed. For he aſſerts, that by means of them the reſtleſſneſs, and approaching convulſions, are ſometimes allayed or prevented; and he adds, that they have been employed with utility, when, in place of the puſtules, only ſome redneſs, accompanied with very minute ſpots, ſuffuſes the ſkin, and the virus appears to lie deeper ſeated in it. He mentions, that to a certainty, the delirium was ſometimes allayed by means of a large cupping-glaſs, with ſcarification, applied to the back of the head. But he ſays, that this remedy appeared to him to be more efficacious when the delirium had come on in the firſt or ſecond ſtage, and had not yet got to a great height. For when a metaſtaſis takes place, or the congeſtion is completed, there is ſcarce any hopes that it will be reſolved. Leeches alſo, applied to the temples, have a remarkable effect in removing the repletion of the veſſels in the head, and overcoming the delirium.

* L. c. p. 122. † L. c. p. 35. 36. ‡ L. c. § 149.

436. Nor is the propriety of employing evacuants, ſtrictly ſo called, leſs diſputed. Some authors conſider every kind of evacuant as ho-

ſtile to the ſtrength, and unfavourable to the eruption; others prefer emetics to cathartics, and, if they grant that cathartics are to be employed in any caſe, only allow them towards the end of the diſeaſe *. Some are not averſe to gentle laxatives, particularly the antiphlogiſtic ones †. And others, with Sydenham ‡, propoſe pretty briſk cathartics at the beginning of the diſeaſe, when it is ſimple and pure, at leaſt three times repeated; and they are confident, that, by means of them, they prevent the eruption, and, as it were, root out the fomes of the diſeaſe ‖. Concerning all theſe points, I ſhall deliver my ſentiments in a few words. In the firſt place, therefore, if the ſymptoms which have been already repeatedly enumerated indicate the preſence of a colluvies in the ſtomach, or the diſeaſe has been communicated by contagion, at the very beginning, before the appearance of the eruption, it is proper to employ a gentle emetic. In general it is ſafer, and more advantageous to give it in divided doſes than at once. But by means of vomiting, not only is the ſordes in the ſtomach, and bilious colluvies, together with part of the miaſma, drawn off in the moſt expeditious manner, before they pervade the internal parts of the ſyſtem, but alſo the propulſion of the eruption to the ſurface is ſaid to be gently and ſucceſsfully promoted. Nay, if all the fomes of the diſeaſe is ſettled in the ſtomach, even the eruption is intirely prevented. But if the colluvies is deeper-ſeated, affecting the inteſtines more, and

the belly is either bound, or does not perform its office, or cannot of itſelf eject the fæces, it is proper, by means of a purgative, to draw it off; for nature has frequently ſhewn, that after a ſpontaneous looſeneſs, when the ſordes oppreſſed the *primæ viæ*, and, by irritating the inteſtinal canal, retarded the eruption, it has often been ſucceſsfully propelled to the ſurface. Nor ought we to be afraid of employing a gentle laxative, even in puerperal women, when ſymptoms of a colluvies in the inteſtinal canal are preſent §. Laxatives compoſed of the ſalts and manna, if they are not given in a pretty large doſe, which I by no means approve of, according to Ludwig do not ſeem ſufficient, and not always to be free of harm ¶. He therefore gives the preference to the freſheſt oil of ſweet almonds, or the gentleſt clyſters, without ſtimulants, particularly when the diſeaſe is advanced, as it is ſcarce poſſible to conceive how ſenſible the bodies become in the progreſs of the diſeaſe. And I think that this advice is particularly to be attended to in the caſe of puerperal women, who require being treated with greater mildneſs and caution. But of the cathartics the milder ones are preferred, as purified whey, either alone or boiled up with tamarinds, caſſia-flowers, cryſtals of tartar, ſoluble tartar, Glauber's ſalt, and the like. But, by unanimous conſent, emollient injections employed during the whole courſe of the

diſeaſe, to relax and open the belly, are conſidered as being by far the ſafeſt. Theſe, by relaxing the inteſtines, and allaying or removing the ſpaſms and irritations, alſo bring about a more expeditious eruption of the puſtules, and, when it does take place, cauſe it to continue and maturate. But during the eruption itſelf, ſome of the moſt cautious phyſicians are of opinion that the coſtiveneſs ought to be ſuffered **, unleſs ſome ſevere ſymptom require the belly's being opened by means of oil, or a clyſter. But when the miliary puſtules appear, it is neceſſary to abſtain from cathartics, properly ſo called, becauſe Allioni, from his experience, affirms, that purging then proves hurtful ††. It is proper, however, to except that caſe in which very ſmall, pellucid, ſcarcely conſpicuous veſicles appear on the ſurface, and do not become wider on employing the proper remedies, nor attain their proper height and degree of maturation. In that caſe it is improper to inſiſt too long on internal remedies of that kind; but, before the ſtrength is exhauſted by long illneſs, when theſe cutaneous roughneſſes are altogether incapable of removing the diſeaſe, the fomes ought to be purged from the inteſtines by means of gentle remedies, as rhubarb, manna, and Glauber's ſalt, in the mean time not omitting the employment of bliſters and other excretions ‡‡. After the exſiccation of the puſtules, at the termination of the diſeaſe, it is likewiſe

proper to purge the belly, that the remains of the diſeaſe lurking in the ſyſtem may not cauſe a relapſe, or generate other ſucceſſions of complaints. With reſpect, however, to the eruption being impeded, as it is ſaid, by cathartics, the experiments which I have made do not ſufficiently confirm it, nor do I know that it is confirmed by the trials of others, nor, to tell the truth, ought it perhaps to be wiſhed for in a diſeaſe the peculiar and natural criſis of which conſiſts in a complete eruption taking place on the ſurface.

* Gaſteller, p. 362. † Molinar, p. 34. Vogel, § 141. ‡ *De Nov. Feb. Ingreſs.* ‖ Allioni, l. c. § 190. § Molinar, l. c. ¶ § 223. ** Ludwig, § 123. †† L. c. ‡‡ Meade, *Monit. et Præc. Med.* ſect. 4. p. 14.

437. Bliſters in like manner have had a various reception ; hence they are commended by ſome, and contemned by others *. Allioni neither recommends nor reprobates them, but obſerved them at one time to be of no ſervice, ſometimes prove hurtful, and at other times of ſome advantage †. Damilani relates, that they generally proved hurtful, as alſo ſinapiſms and epiſpaſtics, particularly at the beginning of the diſeaſe, when the fever was very ſevere, attended with a contracted pulſe, and when the patients were of a ſlender, ſenſible, and dry habit of body ; which he alſo endeavours to confirm by a melancholy inſtance ‡. Barald alſo is not favourable to bliſters, affirming that if they are not hurtful, they are at

leaſt uſeleſs and inefficacious ‖. And he afterwards does not heſitate to aſſert, that when employed prematurely, they retard the eruption of the puſtules, which, however, is denied by Allioni §; nay, that they even force in the puſtules after their appearance; and he repeatedly mentions this ¶. Nor is it ſurpriſing that this happened to Barald, becauſe the miliary diſeaſe in his patients was combined with a bilious, and as it were ardent tritæophya, and therefore did not require any ſtimulus, but rather a check; as happened in the patients in whom Damilani mentions the bliſters not to have turned out well. On which very account, Auguſtinus was obliged in general to abſtain from bliſters, frictions, and other ſtimulants in the miliary diſeaſe at Novare, which was of an inflammatory nature **. On the contrary, when the pulſe is languid and weak; the heat mild; the fluids ſluggiſh and phlegmatic; the habit ſoft and lax; or when a ſufficient quantity of blood has not been taken, in one word, when there is occaſion to employ exciting and ſtimulant means, I would pronounce bliſters to be very well calculated both to call forth the eruption, when it is ſlow and imperfect, and to recall it after being forced in, and to remove and prevent the coma, lethargy, cattarrh, and oppreſſion of the lungs, nay, the looſeneſs itſelf, occaſioned by the metaſtaſis of the morbid matter. Hamilton uſed to employ them very frequently,

and thought ſo much of their ſalutary effects, that when one dried up, he cauſed freſh ones to be applied to other parts; and with reaſon, as the miliary eruption which he had to treat was white, lymphatic, or cryſtalline, accompanied with a ſlight fever, and the patients were of a phlegmatic and lax habit, and their ſtrength was reduced to the laſt degree. The generality adopt the opinion of Hamilton. Ludwig prefers larger bliſters to ſmall ones, although applied to different parts, but he requires them being long kept open, and running ††. Some employ them early. Molinar, when the fluids appear denſe and ſluggiſh, and the virus requires being called out, adviſes the application of them on the fourth or fifth day after bleeding, exactly obſerving the cautions concerning the employment of bliſters, in conſequence of long experience, laid down by Baglivi ‡‡. But Freind, is of opinion, that we ought not always to adhere to the precepts of Baglivi ‖‖; and he is joined in opinion by Petrus De Rotundis §§, a reputable phyſician of Rome, who firſt propoſed the ſparing uſe of mercury ¶¶, from having employed them with the greateſt advantage, ſometimes in dry, ſlender habits, providing revulſion, calling the virus to the ſurface, and exciting the ſyſtem, are indicated; and other reſpectable phyſicians teſtify the ſame thing. For a matron of a very ſlender habit of body, and who beſides, from having been rickety in her youth, had become crooked, was

attacked with the ſporadic miliary diſeaſe, attended with ſlight fever, and a low, irregular, weak, and ſmall pulſe. A watery, lymphatic, white eruption, had begun to appear at the proper time, but becauſe it was imperfect, it did not alleviate the diſeaſe. The reſpiration, in particular, continued to be laborious, irregular, anxious, and accompanied with ſighing. She had a great propenſity to ſleep, and ſometimes raved: but whenever her eyes cloſed, ſhe ſtarted out of ſleep, rouſed by ſubſultus tendinum, and oppreſſion at the cheſt. Two bliſters were applied to the calves of the legs. Within twenty-four hours after their application all the ſymptoms diſappeared. The pulſe became regular, raiſed, expanded, and ſtronger; the reſpiration free, the ſleep tranquil, and the ſubſultus went off; the whole force of the diſeaſe being in a manner turned to the calves of the legs. Under the bliſter, occaſioned by the cantharides, was obſerved a white, thick eſchar, black round the margin, gangrenous, and very fetid, which was gradually ſeparated in conſequence of a ſlow, but laudable ſuppuration taking place, leaving a deep ulcer, which long diſcharged a great quantity of good, white pus, and was gradually filled with fleſh, and covered with a proper cicatrix. Nearly in this manner, by the joint aid of art and nature, did Lucretia Coſta, a lady of diſtinction at Fayence, completely recover from the diſeaſe.

* Vogel, l. c. § 141. † L. c. § 147. ‡ L. c. p. 115. 116. || L. c. p. 31. § L. c. § ſame. ¶ P. 35. 36. 53. 54. ** L. c. †† L. c. § 222. ‡‡ L. c. p. 149. ||| *De Febr. Comment.* ix. §§ *De Victu Acutor.* p. 122.

¶¶ See his *Preface*, p. 24. in which an account is given of his having ſketched a plan for curing ſyphilis by rubbing in mercury, which was not followed by ſalivation. In 1718, this plan was tranſmitted to Paris, to be ſent from thence to the phyſicians of Montpellier two years after. A phyſician there publiſhed *A new method of curing the venereal diſeaſe, by rubbing in mercury, without ſalivation following.* Sic vos non vobis! &c.

438. Among the medicines, the employment of which is not univerſally adopted, muſt be mentioned alſo ſome acids *. For it could not fail to happen, but that they muſt have been rejected by thoſe to whom acidity of the ſerum or lymph of the blood, or a tendency to it, ſeems to conſtitute the principal cauſe of the diſeaſe, as increaſing its fomes; while they are highly prized by others, who have conceived to themſelves that the miliary virus is of a putrid nature. I have already in ſome meaſure ſhewn (426.) the arguments for and againſt both opinions. Let us now ſee what experience, by which alone the truth can be diſcovered, has eſtabliſhed beyond doubt in this controverted caſe. It is an undeniable fact, that the abettors of the former opinion, Hamilton, Hoffman, and others, have performed ſeveral very ſucceſsful cures of the miliary diſeaſe, merely by the employment of abſorbents and alkaline remedies;

and that they have had no occaſion to repent of the plan they had adopted. Nor were the medicines which Meade employed of a different kind †. Chambon De Monteaux alſo, without heſitation, has recourſe to alkaline or volatile remedies, which he prefers to abſorbents and fixed alkalis, namely, the rectified ſpirit of hartſhorn, which Hamilton alſo ſometimes employed, the animal oil of Duppeli mixed with volatile ſalt, and ſpiritus Mindereri, which he thinks ought to be ſometimes ſubſtituted in place of the volatile ſalts. For, by means of theſe, he endeavours to prevent the acidity and lentor of the lymph ‡. Likewiſe Boerhaave, in treating the diſeaſes of puerperal women, among which the miliary one is not uncommon, employed alkaline and antacid remedies, becauſe he ſuppoſed that in them acidity was the hurtful agent, whether it proceeded from the milk, or from any other cauſe ‖. If we are to abide by experience, therefore, I really do not ſee for what reaſon we ſhould be ſo ſtudious to inculcate the employment of acids in this caſe. Among the abettors of the latter opinion no one can deny a place to Allioni. He, however, actuated more by the love of truth, than of his own opinion, ingenuouſly relating the reſult of his experience, does not deny, that, in the firſt ſtage of the puſtules, the eruption had been retarded by means of acids; and that, even in the ſecond, if

they were employed conſtantly, and liberally, they likewiſe occaſioned no ſmall injury §. But that he might not appear to forget himſelf, he adds, in the laſt place, that by means of acids, particularly the vegetable ones, the miaſma is in ſome meaſure corrected: by which words he plainly ſhews how inconſiderable and uncertain he ſuppoſed their efficacy to be ¶. I find from daily experience in this diſeaſe, how inconſiderable and uncertain their efficacy is, or rather that they poſſeſs none at all; and Molinar experienced the ſame thing, having never obſerved them followed by any good effect in the ſpecies which is named *malignant* **. The ſame thing had been already noticed by Hoffman, after Hamilton; nay, he has openly declared that they prove hurtful. All which facts ſeem to point out, that the virtue of acids in this caſe is doubtful, at leaſt with regard to checking and blunting the force of the miaſma; and this more and more confirms our doubts concerning the putrid nature of the diſeaſe. I ſhould therefore ſay, that acids, particularly the vegetable ones, when mild and employed with caution, are calculated for diminiſhing and checking the effects of the diſeaſe, rather than directly oppoſing its courſe; that is to ſay, that they are indicated when the heat and febrile motion exceed bounds; when the ſtrength is vigorous; when the bile is warm and prone to alkaleſcence; in a word, when immoderate irrita-

bility of the ſolids, and the propenſity of the fluids to alkaleſcence, putrefaction, or colliquation, are to be reſtrained.

* Vogel, § 141. † *Monit. et Præc. Med.* l. c. ‡ *Des Malad. des Femm.* T. i. c. viii. || *Aphor. de Cogn. et Curand. Morb.* § 1331. § L. c. § 145. ¶ L. c. ** L. c. p. 113.

439. Two remarkable medicines, I mean opium and bark, cannot be paſſed over here without animadverſion, different opinions concerning their effects being entertained. With regard to the bark, although it is univerſally employed in this diſeaſe, both as a febrifuge and as an antiſeptic, and is highly extolled, it muſt not be employed, however, promiſcuouſly. In the firſt ſtage, when the fever reſembles an intermitting one (390.), or is diſguiſed under the appearance of it (401.), it has very frequently been tried to no purpoſe *. For in that caſe the fever, although it does intermit, or periodically remit, in the ſame manner as the *ſubintrantes*, or *ſubcontinuæ*, yet becauſe it does not ariſe from the fomes of real intermittents, but from the exanthematic poiſon, which has already been ſhewn in its proper place; it is by no means ſubjected to the febrifuge power of that antidote: for the miliary miaſma, as Allioni obſerves †, is not corrected by the peruvian bark. But if the complaint is combined with real intermitting fever, in that caſe the intermitting fever with which it is conjoined, to a certainty may be ſup-

preſſed by the peruvian bark, which never fails to overcome it. Some, however, guard againſt prematurely having recourſe to it, that is, in the firſt ſtage of the diſeaſe, unleſs, in conſequence of bleeding and diluents having been employed, the ſtate of inflammation and tenſion, in which the fibres and all the veſſels are found, has been corrected ‡; as the tonic and ſtrengthening property of the medicine would otherwiſe prove injurious to it. But, when the eruption has taken place, if the intermitting fever ſtill continues, as it generally does when it was really ſuch at the beginning, and is actually combined with the miliary diſeaſe, if the bark has not been employed before, we muſt immediately have recourſe to it: or otherwiſe, during the febrile cold, the eruption becomes depreſſed, and ſtrikes in; which is attended with imminent hazard (408.), as the author juſt now quoted laments the death of two ſtout men having taken place from this cauſe ‖. Sometimes only during the progreſs of the fever it approaches to the nature of a *ſubintrans*, having more manifeſt remiſſions; ſo that if it be not really an intermitting fever, it ſeems to border nearly upon one. Then alſo the bark has been adminiſtered with the greateſt ſucceſs. When a young man, a patient of mine, was affected with the miliary diſeaſe, aphthæ appeared upon his tongue and lips occaſioning very ſevere pain, attended with a perpetual and copious diſcharge of ſaliva. Neither the

aphthæ, ptyaliſm, nor the appearance of the miliary puſtules, afforded any relief to the fever. It was every day aggravated towards evening without cold, and, as it were, imperceptibly; it haraſſed the patient the whole night with exceſſive heat, reſtleſſneſs, and thirſt; but a ſweat breaking out in the morning, it remitted in ſuch a manner, as almoſt to attain a complete ſtate of apyrexia. I preſcribed the peruvian bark to him, and the fever was quickly removed, along with all the concomitant ſymptoms. Meade § affirms ſomething ſimilar, both concerning the removal of the aphthæ and the fever, by means of the bark, adducing the authority and experience of Sydenham. Damilani alſo, who is otherwiſe inclined to ſuſpect the efficacy of the bark, does not reject it whenever the fever is either a real intermittent, or putrid remittent, particularly in puerperal women, and when the miliary diſeaſe is combined with it ¶. But it will perhaps appear ſtrange, that in the firſt ſtage, as I have already ſaid, when it reſembles an intermitting fever, it is not only not removed by the bark, but alſo that the eruption of the puſtules was ſo retarded in the epidemy of Corregio, that it ſometimes did not appear until the fortieth or fiftieth day **; which delay, had it been owing really to the employment of the bark, and not to the anomalous and peculiar nature of the diſeaſe, I ſhould be diſpoſed to think had pro-

bably happened, not through the inefficacy of the remedy, but rather from the nature of the diſeaſe itſelf defying its tonic and ſtrengthening quality. For in the bilious trytæophya, with which the miliary virus was combined, ſuch was the greatneſs of the pulſe, heat, and inflammatory lentor of the blood, and tenſion of the ſolids, that there was no occaſion for a ſtimulus. When the violent action of all the functions, therefore, was ſo much increaſed by employing the bark, how could the ſecretion and excretion of the miliary miaſma go on? But when the violence of the fever is ſomewhat broken, and the pulſe reſtored to moderation, but ſtill more if the ſtrength fails, the bark is ſo far from retarding the eruption, that it rather promotes it; as I have frequently obſerved; or at leaſt, by means of this remedy, I have brought about a ſucceſsful termination of the diſeaſe. Barald himſelf, although his mind is not made up as to the effects of the bark, is obliged to grant the ſame thing, adducing an inſtance by which he ſhews, that on giving the bark all the ſymptoms were allayed, that the ſtrength was improved, and that the miliary puſtules were forced out in a favourable manner, namely, two days after its employment had been begun, and on the fifteenth day after the commencement of the diſeaſe ††. Gaſteller alſo confeſſes, that when debility is preſent the fever is mitigated, and the eruption promoted, by the ſame remedy ‡‡.

* Damilani, p. 124. Barald, p. 31. † § 188. 210. ‡ Allioni, §. 210. ‖ *Id.* § 211. § *Monit. et Præc. Med.* ſect. iv. *Febr. Miliar.* p. 15. ¶ Pag. 142. ** L. c. p. 31. †† Pag. 37. 38. ‡‡ Pag. 363. 364.

440. Opium, as being a very powerful remedy, like others which have a violent effect on the ſyſtem, ought to be employed with the utmoſt caution. It is generally ſuſpected in this diſeaſe by Allioni; and is ſaid by him to be more frequently productive of a bad than good effect. The preſence of the inflammatory diatheſis of the blood, or the great tendency of the diſeaſe to different kinds of inflammation, which is manifeſted in various ways, ſeems to forbid its employment. In the ſecond ſtage particularly, in which the ſkin becomes tenſe, and is affected with a kind of inflammation, while at the ſame time violent fever is preſent, and there is too great an afflux of the blood to the head, cauſing an accumulation there, which takes place as it were in conſequence of the reſiſtance and ſpaſm of the ſkin,— he judges that opium is inadmiſſible †; and adds, that the convulſions, which ſometimes ſucceed the eruption, were not allayed by that remedy, even when they proceeded, according to him, from irritation of the cutaneous nerves, and that its employment in the complicated ſpecies of the complaint, which is generally inflammatory, as alſo in the caſe in which the eruption

is deep ſeated, and does not eaſily ſtrike out, is abſolutely pernicious ‡. As theſe obſervations reſt on the authority and experience of a very celebrated author, they do not ſeem by any means to be deſpiſed, or neglected; particularly as they have been confirmed by Antonius De Auguſtinis, who, in the miliary epidemy of the year 1755, already ſeveral times mentioned, obſerves, that when opium was uſed for removing the watching it proved fatal to his patients ‖; while emulſions of poppy-ſeeds, by means of which he endeavoured to allay the watching, convulſions, delirium, and reſtleſſneſs, were attended with the greateſt advantage. But every one will perceive how far theſe obſervations deſerve notice, on attentively conſidering the remarks already delivered elſewhere on this ſubject, but particularly in the treatiſe on ſmall-pox (241.). But I remember that the moſt beneficial effects were produced by a mixture containing a conſiderable quantity of laudanum, taken in ſpoonfuls at intervals, by the advice of a diſtinguiſhed practitioner at Bologna, in the caſe of a young man, labouring under the miliary diſeaſe, combined with a very acute pleuriſy, after the eruption had continued for ſome days, accompanied with diſtreſſing watching and delirium, and no relief having been received from a copious ſweat and diarrhœa, which were preſent, the veſſels being previouſly ſufficiently emptied, by premiſing

bleeding. I find alſo, that Molinar, truſting to repeated experience of its effects, was by no means averſe to employing opium; nay, that he had diſcovered, that neither inflammations were induced by it, nor, if already preſent, were they aggravated §. But I imagine that he ſpeaks of inflammations in ſome meaſure ſubdued by repeated bleeding and diluent drink; or of thoſe occaſioned rather by a ſtimulus vellicating the nerves, than by the inflammatory diatheſis; for to a certainty, opium does not increaſe theſe laſt ones, but, on the contrary, by in ſome meaſure lulling the ſenſibility, and removing the ſpaſm, wonderfully allays them. In the caſe of puerperal women, prudent phyſicians very properly abſtain from employing opium, that the lochia may not be ſuppreſſed. For it poſſeſſes the peculiar property of checking evacuations of every kind, excepting the ſweat. But if the abdominal viſcera, and the uterus, become ſpaſmodically affected, in conſequence of which the lochia either flow more ſparingly, or ſtop altogether, Molinar judiciouſly remarks ¶, that by employing opium the ſpaſms may be removed, and that, in conſequence of this, the mouths of the veſſels being relaxed, the diſcharge of blood is ſometimes promoted and reſtored.

* § 231. † *Ibid.* ‡ *Ibid.* ‖ L. c. p. 72.
§ Pag. 62. 63. ¶ *Ibid.*

441. I ſhall ſay no more concerning the employment of particular remedies, and rather turn my attention to the management of certain ſymptoms; although, in the former chapters, and eſpecially when the cure of ſmall-pox was explained (275.), I treated the ſubject at ſufficient length, inſomuch that it appears almoſt ſuperfluous to make any more obſervations on it here. On which account, that I may not diſguſt the reader with repetitions, I refer him to thoſe paſſages, ſatisfied with adding only a few obſervations here, which apply in a particular manner. I ſhall therefore conſider the ſtriking in of the puſtules as the cauſe of the moſt ſevere and fatal ſymptoms (414.). In this caſe it is neceſſary to inquire into its origin (345.). If the eruption has been made to ſtrike in, or is retained by the exceſſive febrile motion, or by plethora, or the employment of calefacient remedies, or exceſſive external heat, it muſt be recalled by refrigerants, nitrous remedies, the renewal of the air, diminiſhing the bed-cloaths, bleeding, cupping-glaſſes, and copious and diluent watery drink. But if the admiſſion of the cold air, terror, fainting, and loſs of ſtrength, have occaſioned their ſtriking in, we ought to employ infuſions of elder-flowers, ſcordium, and carduus benedictus drunk off warm, friction, particularly of the breaſt, by means of a woolen cloth, well dried, or impregnated with the vapours of amber *, provided its ſmell can

be ſuffered without inconvenience, and it is not ſuſpected on account of child-birth, or a particular idioſyncraſy, bathing the body with warm water, moiſt and warm fomentations, and, when the pulſe is weak and ſmall, exciting medicines. Nor muſt we in this caſe reſt ſatisfied with *fixed bezoartics* only, namely, the *bezoartic powder* of the London Pharmacopœa, or the powder of *crabs claws*, which are generally recommended, but we ought to try ſome more efficacious and powerful medicine. Ludwig, therefore, propoſes the *alexipharmac eſſence* of Stahl, the ſuccinated liquor of hartſhorn, and camphor itſelf †, not omitting the application of large, acrid bliſters to the calves, neck, and arms, particularly if the patient at the ſame time is oppreſſed with drowſineſs. Meade recommends the *compound powder of contrayerva root*, and the *confectio cardiaca*, of the ſame Pharmacopœa ‡. And, when terror, or any other paſſion, has made the eruption ſtrike in, the patient will receive relief from drinking the *liquor anodynus mineralis* of Hoffman in water, or adding ſome opium, or laudanum, to the other remedies, which poſſeſſes in a wonderful degree the property of allaying the ſpaſms, and drawing the matter to the ſurface.

* Vogel, l. c. § 141. † L. c. p. 222. ‡ L. c. p. 14.

442. The delirium alſo is alleviated, or removed, by leeches applied to the temples, and like-

wiſe by a large wet cupping-glaſs placed on the occiput; warm bathing of the feet, or, inſtead of it, fomentations or epiſpaſtics applied to the ſoles; and not unfrequently by a bliſter clapped on the ſhaved head, to call the matter out. Nor muſt anodynes, as diacodium, and emulſions of poppy, particularly when the patient is diſtreſſed with watching and anxiety, be deprived of their praiſe. But if convulſions are threatened, or have already appeared, or the patient is deſtreſſed with hiccup, beſides the ſuccinated liquor of hartſhorn, and the anodyne mineral one, and ſimilar ſedatives and antiſpaſmodics, a principal rank is held by muſk, as it relaxes the ſpaſms, procures tranquil ſleep, and very gently promotes the cuticular diſcharge. But it ought to be of the beſt kind, and given in a pretty liberal doſe, if we deſire its proper effect. The pulvis Tunquinenſis * is ſaid to have an admirable effect in this caſe, on account of the muſk which it contains †. When the patients are reſtleſs, and about being attacked with convulſions, they are very much relieved by friction applied to the body and limbs; which Allioni, from his experience of it, recommends ‡. Likewiſe the whole body, but chiefly the breaſt ‖, or back, ought to be rubbed with woolen cloths, when a diſcharge of the ſweat is to be excited; or if it has ſtopped, it requires being recalled. In that caſe alſo, it is of great advantage to relax the ſkin by means of moiſt and warm fomentations, or to

moiſten and ſoften it with the vapour of warm water. But we ſhall be able to attain the deſired end more certainly, by adding to the pulvis bezoarticus, or that compoſed of crabs claws, or any other abſorbent, a grain of opium §. A great many authors ſet a high value on camphor, not only as an antiſeptic, but alſo as poſſeſſing a wonderful antiſpaſmodic and diaphoretic property. But it does not always anſwer our expectation; as probably in this diſeaſe the vital powers generally exceed bounds. Hence Auguſtinius ¶ uſually abſtained from it as being hurtful; and Gaſteller ** ſcarcely found any advantage to be derived from it. I myſelf have frequently found it prove hurtful, and induce, or accelerate, the convulſions. It muſt not, therefore, be employed without mature deliberation, and only when the ſtrength is reduced, and the heat ſmall, in order to excite and increaſe them; nor muſt we all at once throw in large doſes of it, as is uſually practiſed. In ſuch a caſe Collin attempted to rouſe the ſtrength by means of a decoction of chamomile flowers ††. Störck employed the claret of the conſerve of cordial flowers. It is uſual among us to allow ſome wine, and nothing in fact more effectually rouſes the ſtrength. Likewiſe whey and wine have an excellent effect. If, along with the loſs of ſtrength, the pulſe at the ſame time is perceived to be very ſmall, more powerful exciting reme-

dies, as camphor, blisters, and the like, are not rejected ‡‡. Besides these remedies, other practitioners employ bark, either alone, or added to the root of serpentaria, valerian, or contrayerva ‖‖. But it is improper to check the diarrhœa by means of astringents, unless it almost reduces the strength completely; for its suppression is frequently followed by death. Hamilton laments that this frequently happened to his patients. He is satisfied with the powder of pearls, or with theriac, or diascordium, and calls forth the fomes of the disease by diaphoretics, that it may not intirely flow to the intestines. Among the sequels which are frequently left by the disease not being sufficiently resolved, a leucophlegmatic tumour often occurs (398.). It is discussed by means of cathartics and diuretics §§. In what manner the other symptoms, or sequels, of the disease, ought to be treated, every one will perceive from the remarks already delivered.

* Pulvis Tunquinensis. Rec. Moschi optimi gran. xvi. Cinabar. nativ. pp. Coccinel. ana. gr. xxiv. M. f. pulv. dandus pro una dosi, aut in duas dividendus.

† Vogel, § 141. ‡ § 148. ‖ Vogel, l. c. *ib.* § *Id. ib.* ¶ L. c. 69. 70. ** Pag. 362. †† L. c. p. 73. ‡‡ Collin, p. 74. ‖‖ Gasteller, p. 363. 364. §§ Vogel, l. c.

443. I have made the principal observations concerning each of the remedies to be employed, accompanying them with some brief remarks upon particular symptoms. But nothing has been

ſaid concerning the method of treatment, which the combinations of the diſeaſe require, as it ought to be varied according to the different ſpecies of the diſeaſe with which the miliary eruption is combined, or which it reſembles. For it is very evident that we muſt attend to the nature of the feigned, or complicated diſeaſe, accommodating the ſame method of cure to it which that diſeaſe would require if it were apart from the miliary complaint; at the ſame time not altogether neglecting the conſideration of the conjoined eruption, ſo that a mixed cure may be adopted, calculated for each of the complaints. But I cannot, on the whole, ſufficiently inculcate the idea of the moſt ſimple method of cure being generally preferable to that which is of a compound and more generous kind, and that thoſe patients recover more ſucceſsfully who do not diſturb the operations of nature, relying more on diluents, correctives, and a proper regimen with reſpect to diet, than on a farrago of drugs, and their various operations; which remark, if it is of advantage in any acute diſeaſe, is highly neceſſary in the exanthematic ones, and particularly in the ſmall-pox and miliary diſeaſe, for nature itſelf manages almoſt the whole buſineſs. After beginning, therefore, in the firſt ſtage with bleeding, vomiting, or purging, according as they may be indicated, the remainder of the cure may be principally intruſted to nature, time,

and the regimen with regard to diet. In Italy, we are in the cuſtom of preſcribing very copious drink, during the whole courſe of the diſeaſe; and this I find to be the general practice *. It is generally prepared with the decoction of barley, graſs, ſorrel, ſuccory, ſcorzonera, or white bread, or of the pureſt water. There is added to it a little nitre, or orange and citron juice, or oxymel, according as the inflammatory diatheſis, or the alkaleſcent diſpoſition of the fluids, ſeems to require. But acids muſt not be employed indiſcriminately, and their employment muſt be regulated by the rule of experience already laid down (438.). Thus the blood is diluted and attempered, and its acrimony blunted and corrected. Gaſteller alſo † employs diluent, refrigerant, and antiſeptic drink, and gives the preference to that which at the ſame time promotes a gentle diaphoreſis. But it will be of ſervice only in the abſence of the ſweating, or when it does not flow profuſely; for otherwiſe diaphoretics would be altogether improper and hurtful. With the view of promoting the diaphoreſis, Ludwig does not heſitate to propoſe a decoction of the roots of the bark, burdock, and ſarſaparilla, for the ordinary drink, and probably in the cold countries, in which he lived, there is occaſion for a ſomewhat more active medicine ‡. Among us ſuch a decoction, during the preſence of the fever, would ſcarcely be admitted. In the abſence of the fever, there-

fore, as in the ſpecies of the diſeaſe which is unaccompanied with it, or in the chronic one named *purpura ſcorbutica*, if it is to be given in any caſe, it ſeems to be employed with moſt advantage. In general, according to Damilani ‖, Auguſtinius §, Ludwig ¶, and others, the drink ought neither to be very warm, nor very cold, but temperate. In the winter-time it ought to incline ſomewhat to warm, and in the ſummer-time to cold, or to the temperature of the ſurrounding air and bed-chamber. In the ſecond ſtage, Allioni ** never permitted the patients to drink cold water. It may be ſaid that ſome propoſe giving the patient for drink abundance not only of cold water, but even of that which is mixed with ice. This is certainly true; but they either employ it only when the eruption is deficient, or in a very warm climate, and in patients accuſtomed to very cold drink; or we have not ſuch a number of cures performed in this manner as to authoriſe our following their advice in general. Beſides the decoctions lately recommended, are allowed alſo emulſions of melon-ſeeds, and the pureſt whey, according to the patient's taſte, or as the phyſician may think proper.

* Allioni, l. c. Damilani, l. c. Barald, l. c. † L. c. p. 363. ‡ L. c. § 229. ‖ L. c. § L. c. ¶ L. c. ** § 233.

444. Great care muſt be taken to avoid exceſ-

ſive heat of the bed-chamber, and loading the patient with too many bed-cloaths, and the patient muſt be well defended from the approach of the air, or ſudden cold; for both exceſſive heat, even when external, as I have already ſhewn (395.), and ſudden cold, or the admiſſion of the freſh air, prevents the eruption from ſtriking out, or, after it has already appeared, forces it in *. The air and heat of the bed-chamber, therefore, ought to be very temperate. But as, in conſequence of the number of by-ſtanders, and the halitus of the patient himſelf, the air ſoon becomes vitiated, and rendered unfit for reſpiration, it ought to be occaſionally renovated with the uſual cautions. It is ſafeſt for the patient to lie in a large bed-chamber, as in it the maſs of the air is longer of being contaminated with the effluvia; and freſh air may be more eaſily admitted without the patient being ſenſible of its admiſſion, or feeling cold. De Haën, who in other reſpects was a very keen advocate for cold air, at a time when he was unbiaſſed in favour of any particular theory in this diſeaſe, condemned the admiſſion of cold air in any manner whatever †. I am aware that there are many who dread no bad conſequences either from the admiſſion of cold air, or the changing of the ſheets and linens. Gaſteller undoubtedly permits both in the treatment of his patients, without any apprehenſion of the conſequence. But others do

not allow it without obſerving the ſtricteſt caution. Hamilton complains of the bad conſequences of the cold air ‖; but Allioni § altogether forbids the changing of the ſheets and linens, particularly in the ſecond ſtage of the diſeaſe; nor is he diſpoſed to allow it even towards the end of the diſeaſe, until very late. But the patients are ſometimes ſo covered with ſweat, and ſurrounded with ſuch fetid effluvia, that if they are not removed they again enter the body, or are received into it by inſpiration. In that caſe it is allowable to change them ¶. They muſt likewiſe be changed when the wet linens begin to be cold, and occaſion a ſenſe of chillineſs. For the patients may catch cold, and the eruption ſtrike in, in conſequence of it. They may then be changed, but very cautiouſly, to prevent the approach of cold to the naked body. We muſt alſo take care that the ſheets or linens may not be too cold or warm; for in the firſt caſe they prove hurtful by the cold they occaſion, and in the ſecond place by drying and corrugating the ſkin. Nor is it proper to introduce a warming-pan between the ſheets when they are damp, as is commonly done to dry them. For ſuch heat becomes unpleaſant, and hurtful to the patient's ſkin **. It is better, if the linens do not ſeem to require being changed, to wipe off the ſweat with aired cloths, and to inſert them alſo be-

tween the body and the wet linens, that the ſweat may be the more eaſily and longer endured without interruption. It is alſo very dangerous for the patients, particularly puerperal women, to riſe out of bed. For they are very apt to fall into ſyncope, in conſequence of which the ſtriking in of the puſtules and fatal convulſions enſue. Hamilton frequently obſerved very melancholy inſtances of the bad effects of thus prematurely getting out of bed ††. With reſpect to the diet, it ought to be weak, particularly when a violent and inflammatory fever is preſent. It muſt be of ſuch a kind, however, as to renovate the languid ſtrength. Some practitioners, every third or fourth hour, give their patients about a pint of veal or chicken broth. They allow ſomewhat more to puerperal women, if the diſeaſe is prolonged, or is about to take a turn: for ſuch patients are allowed ſoups prepared with crumbled bread, given three or four times a-day in ſmall quantity, beſides very weak broth given by way of drink. But we muſt attend to the patient's habits, the country, and ſeaſon, which may occaſion a conſiderable variation in the diet ‡‡.

* Damilani, l. c. † Collin, p. 75. 89. ‡ L. c. ‖ L. c. c. viii. p. 77. likewiſe hiſt. v. p. 109. and hiſt. xi. p. 142. § L. c. § 225. ¶ Auguſtinius, l. c. ** Allioni, l. c. †† Cap. vi. p. 65. 66. 67. ‡‡ Allioni, § 234.

Some particular Remarks on the Miliary Fever of Puerperal Women.

445. We have already remarked (383.), that from the time the miliary eruption began to be attentively obſerved, the diſeaſe was almoſt univerſally conſidered as hoſtile and peculiar to puerperal women alone, having got the particular name of the *febris miliaris puerperarum*. But I ſhewed that, when it was obſerved to attack people of both ſexes and of all conditions, as happened in particular after the diſeaſe which prevailed at Leipſic, it was conſidered as common to all, and not different in its eſſence, cauſes, or effects, from that of puerperal women, excepting that in them it more frequently appeared attended with greater ſeverity and danger, on account of being combined with child-birth. And, laſtly, I noticed that ſome of the moderns conſidered the miliary diſeaſe as not being eſſential or primary, but boaſted of its being factitious or ſymptomatic. Nor did they entertain this opinion of that eruption only which attacks puerperal women, but of every other appearing in patients in general; inſomuch that the eruption muſt be conſidered either as intirely ſymptomatic, or not at all. But I remarked that Störck, Collin, Tiſſot, and other very eminent practitioners, had ſo inconteſtibly demonſtrated

their error, as not a leave a ſhadow of doubt on the ſubject.

446. Very lately, however, moſt of the phyſicians of Paris, as if tired of the commonly-admitted and true opinion, from an extreme love of novelty, have gradually fallen into the opinion of the miliary eruption of puerperal women differing from the common and epidemic diſeaſe, and being therefore ſymptomatic; as I have lately learned from Chambon De Montaux *, a phyſician of Paris, and member of the Royal Medical Society, who avowedly condemns them, declaring that he himſelf, and almoſt all the provincial phyſicians, entertain oppoſite ſentiments to them. It is therefore highly probable, that Planchon † and Gaſteller ‡, in order to ingratiate themſelves with the Royal Medical Society of Paris, who had propoſed the queſtion concerning the miliary fever, replied in an expreſs commentary on the ſubject, that the miliary eruption occurring in puerperal women is not an eſſential, or primary diſeaſe, but a ſymptomatic one, completely different from the common one, which ſometimes prevails epidemically, and conſtitutes a truly eſſential diſeaſe, as I have already hinted (383.).

* *Malad. des Femm.* T. i. c. viii. p. 470. in 8vo, Paris, 1784.
† *Diſſert. ſur la Fievr. Miliair. des Femm. en couch. et ſur leur Traitement, &c.* § 4. ‡ *Traité de la Fievr. Miliair. des Femm. en couch.* p. 31. *et ſeq.*

447. But the arguments by which they are led to ſuppoſe, that the miliary eruption of puerperal women ought to be disjoined from the miliary diſeaſe, muſt be brought forward, that every perſon may diſcover their full force. 1. They ſay, the miliary fever of puerperal women differs from the common and epidemic one, on account of the latter being *eſſential*, or primary, and ſparing neither age nor ſex; while the former attacks puerperal women only, and the wealthy rather than the poor, on account of their peculiar manner of living, the warm chambers, and heating regimen they employ. 2. The eſſential miliary diſeaſe comes on without the eruption being preceded by ſweat, and goes through its different ſtages without being accompanied with it: on the other hand, in puerperal women, the eruption is both preceded by the ſweat, and perpetually accompanied with it, inſomuch that no eruption takes place when the ſweat has not flowed. Hence the eruption is intirely the effect of the ſweat. 3. Their cauſe alſo is different. In the eſſential diſeaſe, the lymph and nervous fluid are contaminated with a peculiar and unknown principle, while, in the puerperal ſpecies, aberration of the milk, retention of the lochia, a colluvies in the *primæ viæ*, and other impurities, occaſion the eruption, and all the ſymptoms. 4. In the former, the ap-

pearance of the eruption alleviates the diſeaſe; in the latter, it does not at all diminiſh the ſeverity of the ſymptoms. But when the puerperal fever is attended with none, or very ſlight fever, they then, in order to anticipate the difficulty which awaits them, aſſert that it muſt be conſidered as an addition to the other excretions, by which nature, in puerperal women, endeavours to free the ſyſtem from the accumulation of vitiated fluids which takes place. 5. In the former, the eruption's retiring in is generally fatal, which is not the caſe in the puerperal one. Hence, in the former, we muſt enter on the cure with the utmoſt caution, that the eruption may not ſtrike in; while in the latter the eruption requires no particular attention. 6. The eſſential diſeaſe is injured by bleeding, while in the ſymptomatic, or puerperal one, bleeding is neceſſary and uſeful, even after the eruption, excepting when a putrid diſſolution of the fluids is preſent. 7. Purging in general is hurtful in the former, on account of forcing the eruption in, and is therefore never admiſſible, unleſs towards the end of the diſeaſe; but in the latter it is proper, and even neceſſary, at any period of the diſeaſe. 8. In the primary diſeaſe no remarkable phenomenon is detected by diſſection; but, in the puerperal complaint, the uterus, inteſtines, lungs, brain, and particularly the abdominal viſcera, are found

in various ſtates of inflammation, putrefaction, and gangrene *.

* Gaſteller, l. c. p. 31. *et ſeq.*

448. Although theſe arguments, which are advanced with a great ſhew of truth, may at firſt ſight be ſufficient to perſuade ſuch as reſt ſatisfied rather with the mere authority of celebrated writers, than the force of their reaſoning; thoſe who are accuſtomed to cloſer inveſtigation, and earneſtly purſue the truth, will probably not be diſpoſed to be influenced by them. For ſome things are admitted which are intirely falſe; and others which are doubtful; ſome are exaggerated; ſome taken for granted, or at leaſt not defined with ſufficient accuracy, as I hope to be able without difficulty to ſhew, by examining each of them in the order in which they have been advanced. What they allege, therefore, at the outſet, ſeems to ſignify nothing more than the danger by which every body knows that the ſporadic diſeaſe differs from the epidemic one. But what has this to do with the queſtion, whether the miliary diſeaſe of puerperal women differs in its eſſence and nature from the other ſpecies of the complaint? Whether or not, for inſtance, does the pleuritis, which is ſporadic, ceaſe to be the ſame complaint on becoming epidemic, or the contrary? They next conſider it as a certain and demonſtrated fact, that the cauſe of each of them is different, while that is the very point at

iſſue; and it appears, from undoubted obſervation, as I have already ſhewn (427.), that neither the heat of the bed-chamber, nor the manner of living, nor calefacients, of themſelves are ſufficient for occaſioning the miliary eruption, unleſs other cauſes intervene; and if ever theſe at all contribute to the production of the eruption, that they rank as remote cauſes; which is not more peculiar to puerperal women than to many others, both rich and poor, as appears at once from the hiſtory of this diſeaſe. For when puerperal women, as happens occaſionally in ſome epidemies and places, are almoſt all affected with the miliary diſeaſe, who can even ſhew to a certainty, that every one of them had employed the ſame method of living, heat of the chamber, and that the rich were therefore more frequently and more ſeverely affected; while the poor, in conſequence of employing a different manner of living, remained, as it were, free of the complaint? Is parturition, by any peculiar privilege, excluded from other diſeaſes in common to every body? No perſon in his ſound ſenſes would take upon him to make ſuch an aſſertion.

449. Beſides, what they adduce, in the *ſecond* place, namely, that in the primary diſeaſe, both before and after the eruption, there is no ſweat, is altogether falſe and contrary to experience; as well as the aſſertion, that in the ſymptomatic ſpecies of puerperal women, copious, profuſe,

and almoſt perpetual ſweats are preſent; and, therefore, that in this reſpect the one is diſtinguiſhed from the other. For I have already ſhewn (390.), that this is in common to both diſeaſes; nor could Gaſteller himſelf deny this in the treatiſe on the miliary fever * which he publiſhed ſome years ago. Nay, Damilani † conſidered the ſweat as ſo ſure a ſign of the eruption about to take place, that, if it is wanting, although the other ſymptoms are preſent, he thinks we muſt not look for the eruption; while, though the other ſymptoms are wanting, the eruption may be foreſeen by the preſence of it alone. Nor do I ſuppoſe that any perſon, either from his own obſervation, or truſting to the authority of writers, can deny that a great tendency to ſweating muſt be conſidered as one of the moſt frequent and certain ſymptoms preceding the appearance of the eruption; inſomuch that the argument may be retorted, that the miliary eruption of puerperal women by no means differs from the other miliary eruptions, on this very account, that in each of them, both before and after the eruption, the patients are almoſt bathed in ſweat. Whoever denies the truth of this will change his ſentiments on turning his attention to the *miliaris ſudatoria* of Picardy, named *la ſuette*, on account of the perpetual ſweats which accompany it ‡.

* *Eſſai ſur la Fievr. Miliair.* a Paris, 1773, p. 86. 265. and throughout in the hiſtories ſubjoined. † L. c. p. 65. in note *c*. ‡ *Vid. Mem. de la Soc. Roy. de Med.* T. ii. p. 46.

450. In the *third* place, they in vain conceive to themſelves that the material cauſe in both diſeaſes is different. What they allege of the milk, lochia, and other excretions, is either merely hypothetical, or rather a kind of combination, than the only and genuine cauſe of the miliary eruption in puerperal women. For in ſuch patients the lymph and nervous fluid may be contaminated with a peculiar and noxious principle, or poiſonous miaſma, as it is named, in the ſame manner as happens in other people labouring under a primary diſeaſe, and, moreover, that vitiation may be combined with retention of the milk, lochia, or other depraved fluids, without the diſeaſe immediately depending on them. Likewiſe the ſerum, lymph, or any other fluid in puerperal women, may become ſo vitiated as to aſſume the nature of a poiſon, or miaſma, and occaſion the miliary diſeaſe. But the difference of their material cauſe does not appear ſo plain from that circumſtance as they perſuade themſelves. Be this as it may, it appears to be a certain fact, that the miliary diſeaſe is often obſerved in puerperal women, without the milk or lochia being at all vitiated, or any other impurities obſervable; while retention and aberration of the milk and lochia, and other depravations of the fluids occur, without the eruption taking place, as repeated experience has ſhewn. Nor, laſtly, when the eruption appears, and acquires a milky

colour, does this white colour afford a certain proof of its ariſing from the lacteal fluid; as a whitiſh milky colour is not unfrequently obſerved to take place in ripe miliary puſtules, independently of parturition, nay, even in men and young people. Add to this, that, whatever be the cauſe of the miliary diſeaſe, the nervous ſyſtem is not leſs affected and deranged in puerperal women than in others, if the diſeaſe be malignant and febrile, as daily experience demonſtrates. From all which it appears, that it is in vain to attempt ſeparating the miliary diſeaſe of puerperal women from the other ſpecies of the complaint, whether ſporadic or epidemic, and that the diverſity of their cauſe is by no means ſufficiently manifeſt.

451. Likewiſe, what they aſſert, in the *fourth* place, is generally erroneous, namely, that on the eruption taking place, the primary diſeaſe is relieved, while that of puerperal women, on account of its being ſaid to be ſymptomatic, receives no relief from it. For it does not always happen, that the primary diſeaſe, on the eruption taking place, is relieved; but only the benign ſpecies of it, and not the malignant one, which, on the contrary, on the eruption taking place, and after it, continues to rage with great violence; as has been frequently obſerved both by myſelf and others. And the ſame thing happens in the miliary diſeaſe of puerperal women, according as

it is benign or malignant; although, I muſt confeſs that in them it is more frequently malignant, and more dangerous, on account of the combination of ſymptoms; and ſuch is the force of truth, that even they cannot deny, that ſometimes the miliary diſeaſe, even in puerperal women, when it is unattended with fever, or accompanied with but a ſlight one, contributes in no ſmall degree to purify the body from the excrementitious humours, that is, as I imagine, alleviates the diſeaſe. As theſe ſymptoms are ſimilar in each diſeaſe, and the eruption ſometimes alleviates the fever and its ſymptoms, and ſometimes aggravates it, according to the degree of benignity or malignity of the diſeaſe, there is no reaſon for ſaying that the one differs from the other in its nature and eſſence. If, therefore, the miliary eruption is not leſs eſſential or primary in puerperal women than in others, as in fact appears from ample experience, it follows, that in them the forcing in of the puſtules muſt be conſidered as equally fatal, or at leaſt attended with as much danger as in others; nor muſt it be neglected, as they have erroneouſly aſſerted, in the *fifth* place. In proof of which, I call upon Hamilton, Hoffman, Juncker, Allioni, and a great many others, who have frequently obſerved the moſt dangerous conſequences reſult from their ſtriking in, unleſs their place was ſupplied by a copious diſcharge of urine, or the flow of the lochia, or a diar-

rhœa, or ſweat, or ſeveral of theſe evacuations conjoined, by which the miliary fluid was very ſeaſonably drawn off.

452. What they confidently aſſert concerning bleeding and purging, in the *ſixth* and *ſeventh* places, to confirm the alleged danger, deſerves no credit. For, in both caſes, either the letting of blood, or purging the belly, is hurtful, unleſs one or other is indicated by the ſymptoms which are preſent; as I have again and again ſhewn in different parts of this work, and particularly in par. 432. 433. 434. Nay, in the epidemic miliary diſeaſe, ſymptoms indicating both bleeding and purging are frequently found, as Allioni, Auguſtinius, and Barald, in particular, have frequenly obſerved. On the other hand, according to Hamilton, they ſeldom occurred in puerperal women, and only when pleuriſy, ſuffocation, or ſome other ſymptom was preſent. It will depend upon circumſtances, therefore, both in the common miliary diſeaſe, and in the puerperal one, whether bleeding or purging will be proper, or neither of them. But if it is ever expedient in the puerperal miliary diſeaſe to let blood even a ſecond time, and that too while the eruption is going on, or to purge the belly at any time, it is not neceſſary on account of the diſeaſe itſelf, but chiefly becauſe it is generally combined with retention of the lochia, aberration of the milk, plethora, and inflammation of the uterus, inteſtines,

lungs, brain, and other viſcera, or with a gaſtric or bilious colluvies. And as it often happens that the complaints with which the miliary diſeaſe in puerperal women is aſſociated, are ſo urgent as to particularly require being ſpeedily and powerfully oppoſed, it is to be underſtood in this ſenſe only, that the miliary eruption may in the mean time be neglected, not omitting, on account of it, the remedies which ſeem calculated for removing the former, as bleeding or purging. Nor is this peculiar to the miliary diſeaſe which affects puerperal women; as the very ſame thing may happen in any other complicated ſpecies of the miliary diſeaſe (432.).

453. The *laſt* difference which is adduced from diſſection, rather demonſtrates the effects of the diſeaſes with which the miliary eruption in puerperal women was combined, than a difference of nature between it and the primary complaint. For ſimilar appearances are likewiſe diſcovered, unconnected with parturition in the primary diſeaſe, varying according to the degree and diverſity of the combination. To paſs over the obſervations of others, I ſhall adduce, in confirmation of the fact, only two diſſections which I find recorded by Gaſteller. Laurence Duchene, twenty-five years of age, died of the primary miliary diſeaſe. On diſſection, the left lobe of the lungs appeared full of black thick blood, which had alſo filled the whole cellular membrane *. In the ſame year, namely,

1771, Sig. Tas De Grain, a clergyman of Amilly, upwards of twenty-eight years of age, died within four or five days, in conſequence of a very malignant miliary diſeaſe under which he laboured. The diſſection of the dead body diſcovered ſome ſlight collections of blood within the head, and ſome ſlight inflammations here and there in the inteſtines, but ſhewed that the lungs were more ſeverely affected; in particular, the left lobe was filled with black coagulated blood, which was alſo everywhere effuſed into the cellular membrane. The left auricle and ſinus of the heart were filled with a polypous concretion, which probably might have been occaſioned by the patient's death †. Nor is the diverſity of effects found in the dead bodies of puerperal women ſo great as thoſe on the oppoſite ſide of the queſtion would make it appear. For Hamilton diſſected the body of a puerperal woman, who had died of this diſeaſe, and diſcovered no morbid appearance, excepting a polypous concretion in the cavities of the heart ‡. Likewiſe Bianchi, Profeſſor of Anatomy at Turin, mentioned to Allioni his having once found the uterus ſomewhere inflamed in the bodies of puerperal women, but that the real cauſe of the patient's death had generally eſcaped his obſervation ‖. But to return to the combination lately mentioned, Planchon alſo is obliged to admit it §,

although he generally makes a distinction between the miliary disease of puerperal women and the common species of the complaint. His words are: "I am willing to grant that a combination of the causes of each disease may occasion a very great resemblance between them, nay, may make them appear to be the very same disease, which requires being particularly attended to, that the necessary cautions may be employed for the proper treatment of the complaint." And again, a little after, he confesses, that in consequence of this, writers had been led to believe that both diseases were one and the same ¶; and, lastly, he grants, that whatever in fact be the general cause of the miliary disease, the symptoms are almost the same in puerperal women as in others. The only doubt which remains on his mind is, that the miliary disease is frequently observed in puerperal women, while the complaint in the mean time does not prevail epidemically **. Hence he infers, that in puerperal women it arises from some peculiar fluid. But had he attended to the most usual division of the complaint into sporadic and epidemic, as most other exanthematic diseases are divided, it would without doubt have removed every scruple on the subject.

* *Essai sur la Fievr. Miliar. Observ. Traisiem.* p. 232. † L. c. *Observ. Quatriem.* p. 239. ‡ *De Febr. Miliar.* c. vi. p. 67. || Allioni, l. c. c. viii. § 138. § L. c. § 7. ¶ *Id. ib.* § 8. ** *Ibid.*

454. As the miliary diſeaſe of puerperal women, therefore, does not differ from that which attacks other people, and both of them are of the ſame nature, and originate in the ſame manner, it follows that the ſame method of cure is applicable to both. Hence, when I deſcribed the cure of this eruption, I detailed it in ſuch a manner as to comprehend alſo that which is calculated for removing the miliary diſeaſe of puerperal women. It would therefore be ſuperfluous in this place to repeat its particular treatment, and thus do the work over again. But if any difference occaſionally takes place, it will intirely depend on the circumſtance of its being combined with parturition, and preceding geſtation. The phyſician ought principally to attend to the lochial diſcharge; for if it is ſtopped, or diminiſhed, it is neceſſary to employ bleeding, ſometimes even repeated; and the uterine region ought to be relaxed, by means of emollient fomentations; and the different paſſages require to be opened by means of gentle aperients, that the lochia may be recalled, or occaſionally promoted. And nearly the ſame remedies may be employed which have been already recommended in the milk-fever of puerperal women, or in the puerperal fever of the moderns. Likewiſe, if the *primæ viæ* abound with a putrid colluvies, it muſt be gently ejected by means of injections or ca-

thartics. Both for ſupporting and reſtoring the flow of the lochia, if it is deficient, and for opening the belly, which are two of the moſt important objects, the phyſicians of Germany conſider the balſamic pills of Becher, Stahl, or Hoffman, as being the beſt calculated, and preſcribe twelve or fifteen grains of them to be taken for ſome days in the evening *. For they are of opinion, that by means of them the lochial diſcharge is promoted, or a diarrhœa excited, which not only carries off the ſordes of the inteſtines, but alſo in ſome meaſure may ſupply their place. But when ſomewhat more acute fever, or the preſence, or fear, of an inflammatory diatheſis, forbid the employment of theſe pills, the repetition of the injections, oil of ſweet almonds, the mildeſt neutral ſalts, and caſſia-flowers, in divided doſes, will completely anſwer the propoſed end. The diet ought to be poor, ſuch as I have already preſcribed for puerperal women, but in the progreſs of the diſeaſe it ought to be ſomewhat more generous, for the evacuations which the patients have ſuſtained require more ſupport.

* Vogel, l. c. § 141.

A REMARK CONCERNING THE PLAGUE.

455. It is evident that that very cruel depopulator of cities and provinces, commonly called the *plague*, belongs to the exanthematic febrile diſeaſes.

For in it both buboes, and carbuncles, and other eruptions take place on the ſurface, at one time accompanied with fever, at another time not, and almoſt conſtitute its peculiar eſſence. But ſuch is the force of the contagion in it, that the diſeaſe is univerſally propagated with aſtoniſhing rapidity, and almoſt uniformly proves fatal. I ought to have cloſed the account of this ſeries of eruptive diſeaſes, with an expreſs chapter on the plague. But as I never happened to have an opportunity of ſeeing or treating this dreadful ſcourge to mankind, in my account of it I muſt have been under the neceſſity of ſervilely copying the authors who have written on the ſubject before me, without being able to add any thing of mine. That I may not, therefore, retrace the ſame ground, I conſider it as better to refer the ſtudent to thoſe authors who have expreſsly written on this ſhocking diſorder. And as ſome of theſe authors have committed to writing what came under their own obſervation, and ſome have compiled a very complete account of the diſeaſe from others, I cannot recommend the peruſal of their works too much. Among the former claſs, the number of which is very conſiderable, we muſt make particular mention of Mercurialis *, Capivacci †, Sydenham ‡, Septali ‖, Diemerbroeck §, Hodges ¶, Chicoyneou **, and, among the lateſt, De Mertens ††. Of the latter claſs, to paſs over the names of others, let thoſe of Muratori ‡‡ and

De Haën ||| ſuffice, who have not only moſt carefully collected all that has been obſerved or written concerning it, but have greatly enriched their account with obſervations and advices of their own. To theſe authors, therefore, I earneſtly recommend my readers, and hope that they may reap ſuch advantage from the labour and experience of their predeceſſors, as to be able, ſhould they ever have the misfortune to be called upon, to prove themſelves thoroughly provided with the neceſſary previous information relating to ſo very important a ſubject §§.

* *De Peſt. an.* 1577. Venet. † *Med. Prat.* lib. vi. ‡ *Oper.* ſect. 2. || *De Peſt. et Peſt. Affect.* lib. v. Mediol. 1622. § *De Peſt. Neomagi Oper.* T. ii. ¶ *De Peſt. Lond. ann.* 1665. ** *Relation. de la Peſt. de Marſeille*, Paris, 1720. †† *Obſerv. Med. de Febr. Putr. de Peſt. nonnulliſq. aliis Morb.* P. ii. c. i. *Hiſt. Peſt. Moſcovenſ. ann.* 1771. ‡‡ *Del Gov. della Peſte e delle maniere di guardarſene, Tratt. Diviſo in Politico, Med. ed Eccleſiaſt.* Modena, 1714. Likewiſe, *Relazion. della Peſt. di Marſiglia Pubblicat. dai Medic. che Hanno Operato in Eſſa con Alcun. Oſſervaz di* Ludov. Ant. Muratori, *ed altre giunte, &c.* Modena, 1721. ||| *Rat. Med.* P. xiv. *ſect. alter De Peſt.*

§§ To this claſs of diſeaſes probably ought to have been referred, the ſwellings of the parotid and maxillary glands, commonly called in Italy *Orecchioni*, as having many ſymptoms in common to the exanthematic diſeaſe. But, becauſe this has not yet been ſufficiently demonſtrated by obſervations, I have judged it as being better to treat of them in the following volume.

END OF VOLUME THIRD.

Printed by J. Pillans & Sons,
Edinburgh.